



# 1993/94 Catalogue



\$2





# 1993/94 CATALOGUE

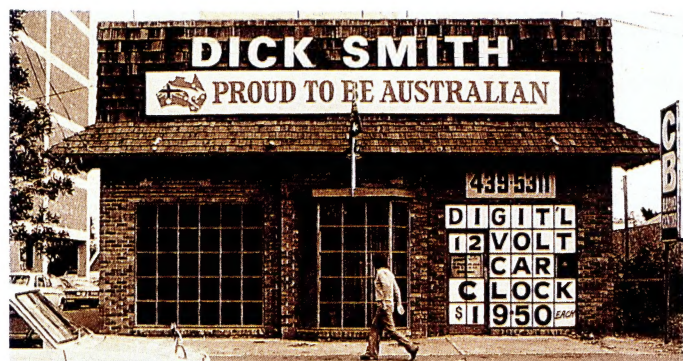


## Yesterday, Today and Tomorrow.

Thanks to you, Dick Smith Electronics this year celebrates 25 years in business.

That's good for us and good for you: good for us because we are obviously doing something right; good for you because when you purchase from us you know that you are dealing with a solid, stable company that will be around in the future.

We are immensely proud of our history, our growth, and our reputation as a dynamic Australian company, and in this, our anniversary year, it is fitting to reflect on our past and review our hopes and expectations for the future.



The fledgling company founded in 1968 operated out of a single shopfront in Sydney, installing car radios. Today we have 103 company stores spread over the larger cities and towns in Australia and New Zealand and employ over 1100 staff. Our Wholesale Division supplies over 100 independent authorised stockists in smaller towns and country areas, as well as other sectors of industry.

Moving with the times, the company successfully diversified into hobbyist and consumer electronics, and today offers a range of more than 5000 products, from satellite and computer systems to light bulbs and batteries.

The original Mail Order Division is still trading strongly and offers 24-hour turnaround on orders to more than 100,000 regular customers.

In keeping with the company's broader product and customer profiles, there have been corresponding changes in store appearance and layout. Bigger and brighter stores, wider aisles, product groupings and category colour coding are more welcoming to the entire family.

While the company has grown and changed, there has been one common thread running through the fabric of the company that has given it much of its strength and durability.

That thread is uncompromising customer service. It was the founding philosophy of the tiny business started in 1968, and is still the guiding principle by which the company operates today.

Today, more than ever, people recognise and demand value for their money, and that goes well beyond the product alone. Customers want service and security, and a successful company must respond to their needs.

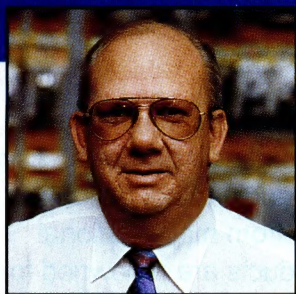
At Dick Smith Electronics, we believe we are doing that. We have taken customer service a step further with the recent introduction of our Computer Easy customer care plan and VIP Club, a comprehensive service and support initiative that takes the risk and hassles out of computer purchasing, especially for first time buyers. Similar support plans for security equipment and cellular phones will follow.

We couldn't offer this level of support unless we were confident of the quality and reliability of the product we sell. To this end, our team of buyers scours the world for electronic products that offer technological excellence and value for money. Our highly skilled Quality Assurance people ensure that products meet stringent standards of safety and performance.

As we move towards the 21st Century, our company is committed to keeping pace with changing technology and changing consumer needs. You, our customers, come first, and we will strive to give you the product you want at prices you can afford. Our reputation is for sound management and ethical business practices, values that are essential to the future of this company. We will continue to grow, but not at the expense of service and value. Rather, we hope our growth will be because of the extra effort we make to satisfy your needs.







# WHAT'S IN STORE FOR YOU

Dear Customer,

*It is now 25 years since our illustrious founder started a small electronics business in Sydney, and whilst during that time the Dick Smith Electronics business has grown enormously and moved with the times, the fundamental philosophy of customer service and satisfaction has not changed.*

*Our team has a wide variety of skills and and is dedicated not only to service, but also to product excellence, value for money and sound advice.*

*You will find this year's catalogue contains an exciting, wider range of merchandise, especially in Audio, Phones and Computers. I commend to those interested in Computers, particularly the newcomer, our "Computer Easy" Customer Care Plan. For those serious about electronics, I hope you will find great interest in the expanded ranges of Componentry, Tools, Test Equipment and the like. Our range of technical books is more than twice the size of last year's.*

*On behalf of all of us at Dick Smith Electronics, I thank you for your patronage, without which our company would not be trading so successfully.*

Regards

*Jeff Grover*

Jeff Grover  
Managing Director

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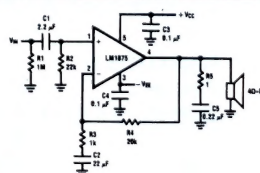
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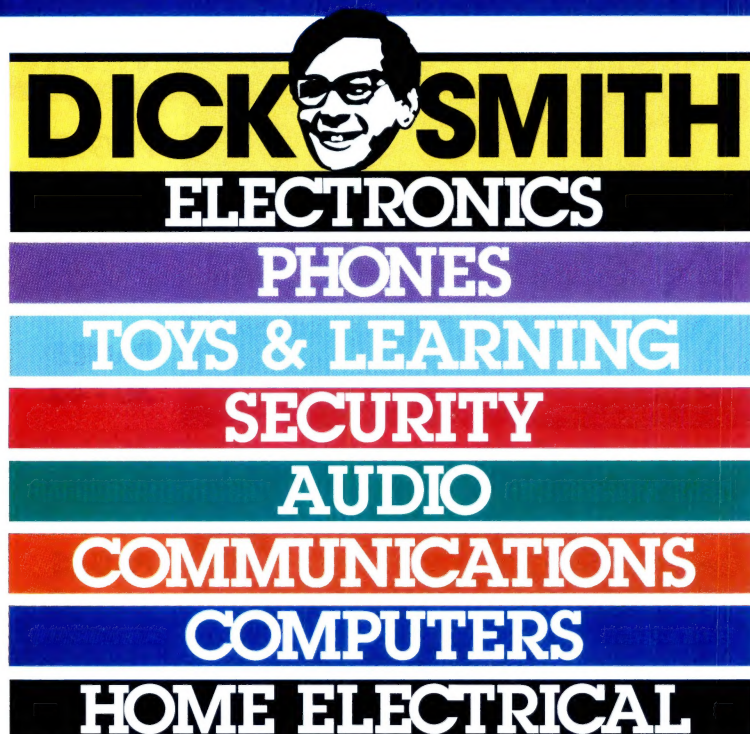
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# WHAT'S IN THIS CATALOGUE



Our new 1993/94 Catalogue contains an exciting range of hundreds of new products - from electronics to computers, audio to educational toys. Many of these come from major national manufacturers whose products are renowned for providing superlative quality and value for money.

All our products are grouped into colour-coded categories - making them very easy to find. Simply look up the category of the item you are seeking in the quick index you'll find on the previous page and follow the colour page tabs that identify the sections. Alternatively, you'll find a detailed product index at the back of this catalogue.

Details of some of our customer benefits are shown below, with the following pages giving details of where to find our stores and authorised stockists. Of course, you can also order by phone, mail or fax as explained on the opposite page.

## SHOPPING WITH DICK SMITH ELECTRONICS

### Professional Service And Advice:

Our store staff are more than happy to help you find what you're looking for and advise you on any technical matters you may be unsure of. In turn, our Technical Services staff provide support to our store personnel in matters of a particularly complex nature. In short, where it relates to our merchandise, don't hesitate to ask - we realise many purchases require careful weighing of the facts.

### 7-Day Money-Back Guarantee

If, for any reason, you're not satisfied with your purchase, simply return it to us within 7 days (14 days for mail-order customers) in original condition and in its original carton along with your sales docket. We'll happily exchange it or refund your money, less transportation costs.

### Guaranteed After-Sales Service And Support

Unlike many other retailers, we maintain a national service network that can provide parts and repairs to many of the products we sell. Should a product you have purchased from us require repairs or spare parts, please contact your local store or the Service and Spares Centres listed below:

#### **NSW Service & Spare Parts Centre**

Ph.: (02) 888 3077  
Fax: (02) 887 2972

#### **Victoria Service Centre**

Ph.: (03) 429 5817

#### **Queensland Service Centre**

Ph: (07) 391 8096

#### **Western Australia Service Centre**

Ph.: (09) 250 1461

#### **2 South Australia Service Centre**

Ph.: (08) 347 1900

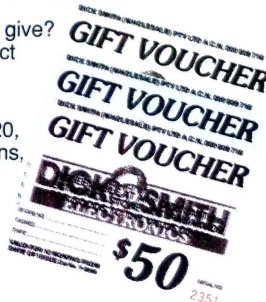
### Our "Raincheck" Policy

On the rare occasion that your local Dick Smith Electronics store has sold out of a currently advertised line, we are happy to issue you with a "Raincheck". As soon as new stock arrives, this assures you of being able to buy the original item (or a comparable product) at the advertised price - even if the original promotion has ended. Naturally this cannot apply to items that have been advertised as "limited", "discontinued" or "clearance" lines.

### Gift vouchers

Don't know what to give?  
We have that perfect gift for you!

Gift vouchers are available in \$10, \$20, & \$50 denominations, and they're redeemable at any Dick Smith Electronics store throughout Australia.



### Wholesale Prices - Buy In Bulk And Save!

Any organisation buying in commercial quantities may be eligible for our substantial wholesale discounts. Simply call our Wholesale division on any of the following numbers for more information:

#### **Head Office:**

Phone: (02) 888 3200  
Outside Sydney: (008) 26 3922  
(Free Call)  
Fax: (02) 805 1986

#### **Melbourne Office:**

Phone (03) 428 0140  
Fax: (03) 428 0139

### TOP BRANDS, TOP QUALITY, TOP VALUE:

We've got the famous brand names you want - at a price to suit your budget! Choose from such respected names as: Sanyo, Panasonic, Uniden, Motorola, NEC, Epson, Sharp, Philips, Digitor, Citizen, Sony, Shimasu, Canon, IBM and Commodore.

### WE ACCEPT ALL MAJOR CREDIT CARDS:

We are happy to accept payment via Bankcard, Visa, Mastercard, American Express AGC Credit Line and Diner's Club plus cheques, money orders, bank drafts, etc.



## IMPORTANT:

For information concerning guarantees, pricing and many other consumer matters, please see the inside back cover of this catalogue.



# Buy The Easy Way - Order by Phone or Fax!



**Miles from the nearest store?**  
**No problem!**

Living in a remote area doesn't mean you have to do without - we're only as far away as the nearest phone, fax or mailbox.

**The Shop that's Open for Business 24 Hours a Day!**

Even if your working or waking hours don't match up with normal retail trading hours, we're here to serve you - when it suits you.

Use your credit card and cut out the waiting!

Buy by phone using your credit card and there's no waiting for the mail or for cheques to clear - we'll despatch your goods straight away!

## Satisfaction Guaranteed!

When you order through Dick Smith Electronics Phone & Mail Orders, you can rest assured that you're being looked after by a team of professionals. The following policies ensure your satisfaction:

### • **14-Day Money-Back Guarantee!**

If you're not completely satisfied with your purchase, return it in its original packaging within 14 days, and we'll refund your money, less transportation costs - no explanations necessary.

### • **Automatic Back Orders**

Out of stock lines over \$10 are automatically placed on back order for later delivery. Or, if you prefer, we'll refund prepaid orders.

### • **Mailing list**

Most of our customers like to be placed on our mailing list, so they can keep up with all the fantastic special offers we make during the year. If you'd rather not receive these offers, there's no problem.

### • **Sales Tax Exemptions**

Sales tax exemptions are available to customers when an approved exemption certificate is supplied with an order.

## Wholesale Rates to Businesses, Manufacturers and Government Departments

Wholesale prices are available to approved business organisations, government departments and manufacturers. If you qualify and would like the discount, call Dick Smith Wholesale for your next purchase. See page 5 of this catalogue for more details.

## Easy Payment

Paying is as easy as can be. Please use whatever method you find most convenient. We accept the following:

### • **All Major Credit Cards:**

Bankcard, Mastercard, Visa Card, American Express, Diner's Club, even New Zealand & Papua New Guinea Bankcard and Visa.

- **Cheques In A\$**
- **AGC Credit Line**
- **Money Orders In A\$**
- **Bank Drafts In A\$**
- **Accounts -**

Many businesses and Government Departments have discovered the convenience of opening an account with us.

## Fast Delivery

You can specify how you want your order delivered according to your preference and budget:

### • **Air Freight:**

It may not be cheap, but it's very fast - normal delivery to most areas in Australia is made next day! We'll even air-freight your goods overseas.

### • **Road Freight:**

A good balance of expense and speed - delivery anywhere within a few days!

### • **Postal:**

Australia Post will deliver your parcel promptly at very reasonable cost.

### • **Courier:**

Dick Smith Electronics couriers deliver all over Sydney for those customers who simply can't wait.

**FOR YOUR CONVENIENCE,  
TWO MAIL-ORDER PURCHASE  
FORMS ARE INCLUDED IN THE  
CENTRE OF THIS CATALOGUE.**

**DICK SMITH**  
**ELECTRONICS**  
**PHONE & MAIL ORDERS**

## **THREE EASY WAYS TO ORDER:**

### • **24 Hour Phone Orders:** **Outside Sydney**

(Free Call):(008) 22 6610

**Sydney:** (02) 888 2105

• **Fax:** (02) 805 1986

### • **Mail Orders:**

**Dick Smith Electronics**

**Mail Orders**

**Reply Paid 160**

**PO Box 321**

**North Ryde, 2113, NSW**

**(No postage required)**



# OVER 150 STORES AND STOCKISTS



## STORE LOCATIONS

### NSW

Albury	471 Dean Street	(060) 21 8399
Bankstown	T54 Level Bankstown Square	(02) 707 4888
Blacktown	22-24 Patrick Street	(02) 671 7722
Bondi Junction	90/94 Ebley Street	(02) 387 1444
Brookvale	Shop 2, 1B Cross Street	
Campbelltown	Warringah Mall	(02) 905 0441
	Shop 8 Endeavour Square,	
	Dumaresq Street	(046) 27 2199
Chatswood	Shop 235, Chatswood Chase	(02) 411 1955
Chullora	147 Hume Highway	(02) 642 8922
Gore Hill	164 Pacific Highway	(02) 439 5311
Gosford	99 Donnison Street	(043) 25 0235
Hornsby	17-19 Florence Street	(02) 477 6633
Hurstville	124 Forest Road	(02) 580 8622
Kotara	82 Park Avenue	(049) 56 2092
Liverpool	Cnr Elizabeth Dve & George St	(02) 600 9888
Maitland	450 High Street	(049) 33 7866
Miranda	621 The Kingsway	(02) 525 2722
Newcastle	173 Maitland Rd, Tighes Hill	(049) 61 1896
North Ryde	396 Lane Cove Road	(02) 878 3855
North Sydney	Shop M15 Greenwood Plaza	(02) 964 9468
Orange	217 Summer Street	(063) 61 8400
Parramatta	37 George Street	(02) 689 2188
Penrith	Cnr Henry & Riley Streets	(047) 32 3400
Sydney	767 George Street	(02) 211 3777
Sydney	125 York Street	(02) 267 9111
Tamworth	Shop 3, Regent Cinema	
	Complex Kable Ave	(067) 66 1711
	263 Keira Street	(042) 28 3800

### Wollongong

### ACT

Belconnen	5 Chandler Street	(06) 253 1785
Fyshwick	96 Gladstone Street	(06) 280 4944

### VIC

Ballarat	35 Sturt Street	(053) 31 5433
Bendigo	145 McCrae Street	(054) 43 0388
Box Hill	Shop 46 White Horse Plaza	(03) 890 0699
Brighton	Cnr Hawthorn & Nepean Highway	(03) 592 2366
Coburg	260 Sydney Road	(03) 383 4455
Dandenong	Shop 1, 176 Lonsdale Street	(03) 794 9377
Essendon	1150 Mt. Alexander Road	(03) 379 7444
Footscray	Shop 11, 13 Footscray Plaza	(03) 689 2055
Frankston	70 Wells Street	(03) 783 9144
Geelong	125 Moorabool Street	(052) 23 2711
Highpoint	Shop 41B, Level 2	
	Highpoint City Shopping Centre	OPENS JUNE
Melbourne	399 Elizabeth Street	(03) 326 6088
Melbourne	Shop 20, Midtown Plaza	
	246 Bourke Street	(03) 639 0396
Richmond	Cnr Bridge Road & Boulevard	(03) 428 1614
Ringwood	Shop 2, 141 Maroondah Highway	(03) 879 5338
Springvale	Springvale & Dandenong Roads	(03) 547 0522

### QLD

Booval	160 Brisbane Road	(07) 282 6200
Brisbane	157 Elizabeth Street	(07) 229 9377
Buranda	170 Logan Road	(07) 391 6233
Cairns	201 Mulgrave Road	(070) 311 515
Capalaba	Shop 11, Capalaba Park Shopping Centre	
	Redlands Bay Road	(07) 245 2870
Chermside	Cnr Gympie & Hamilton Roads	(07) 359 6255
Maroochydore	24 Horton Parade	(074) 79 1800

Rockhampton	Queen Elizabeth Dr	(079) 27 9644
Southport	Gold Coast Highway, Welch St	(075) 32 9033
Toowoomba	Cnr Bowen & Ruthven Streets	(076) 38 4300
Townsville	Cnr Kings Road & Woolcock St's	(077) 72 5722
Underwood	Cnr Pacific Hwy & Kingston Rd	(07) 341 0844

### SA

Adelaide City	252 Pulteney Street	(08) 232 1200
Beverley	688 Port Road	(08) 347 1900
Elizabeth City	Shop T25 Prince Charles Walk	
	Elizabeth City Ctr	(08) 255 6099
Enfield	435 Main North Road	(08) 260 6088
St Marys	1267 South Road	(08) 277 8977

### WA

Cannington	Cnr Wharf Street & Albany Highway	(09) 451 8666
Fremantle	66 Adelaide Street	(09) 335 9733
Midland	Cnr Victoria Prd. & Gt. Eastern Hwy,	
	Midvale (near Roe Hwy)	(09) 250 1460
Northbridge	414 William Street	(09) 328 6944
Raine Square	125 William Street	(09) 481 3261

### TAS

Hobart	Shop 40a Cat & Fiddle Arcade	(002) 31 0800
Launceston	139 Charles Street	(003) 34 4555

### NT

Darwin	20 Stuart Highway	(089) 81 1977
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## AUTHORISED STOCKISTS

### NSW

Armidale	New England Electronics Shop 17	
	Richardson Arcade Beady Street	(067) 71 1655
Ballina	Ballina Electronics 102A River Street	(066) 86 7022
Batemans Bay	Baycity Sight n' Sound - Shop 1, Fenning	
	Place Arcade,	(044) 72 5030
	Orient Street	
Bathurst	Electronic Frontiers 104 William Street	(063) 32 3933
Bourke	Countrywide Services	
	28 Oxley Street	(068) 72 2150
Bowral	Bowral Electrical Supplies	
	28 Station Street	(048) 61 1861
Broken Hill	Hobbies & Electronics	
	37-39 Oxide Street	(080) 88 4098
Coffs Harbour	Coffs Harbour Electronics	
	195 High Street	(066) 52 5684
Cootamundra	Cootamundra Music & Lite	
	264 Parker Street	(069) 42 2561
Deniliquin	Deni Electronics 220 Cressy Street	(058) 81 3672
Dubbo	Chris's Hi Fi 1/100 Talbragar St	(068) 82 8711
Goulburn	Tunlive Pty Ltd 90 Auburn Street	(048) 22 1288
Grafton	Repairs & Spares 140 Fitzroy Street	(066) 42 1911
Griffith	Miatronics 166-170 Banna Avenue	(069) 62 4534
Katoomba	Niagara Photographics & Sports	
	92 Main Street	(047) 822 800
Kempsey	P&K Richards P/L 36 Smith Street	(065) 63 1134
Leeton	Leeton Audiotech 93 Pine Avenue	(069) 53 2800
Lightning Ridge	Lightning Ridge Solar & Power	
	Morilla Street	(068) 29 1013
Lismore	Decro Electronics Services	
	12 Carrington St	(066) 21 4137
Lithgow	Douroy Photographics 183 Main Street	(063) 51 3173
Macksville	Macksville Electronics 1 River Street	(065) 682 899
Moree	Moree Electronics 98 Heber Street	(067) 52 2091
Mudgee	Headware 73 Church Street	(063) 72 3895
Murwillumbah	Murwillumbah Strings & Things	
	82 Main Street	(066) 72 3684
Narrabri	Namoi Computer Service	
	75 Maitland St	(067) 92 3274
Nelson Bay	Nelson Bay Elect & Hobbies Shop 9/10	
	Cinema Mall Stockton Street	(049) 81 3685
Nowra	Nowra Electronics 77A North Street	(044) 21 0722
Parkes	Strad Music Centre	
	279-281 Clarinda Street	(068) 62 3366
Port Macquarie	Hastings Computer Services	
	146 Gordon Street	(065) 84 0255
Richmond	Silicon Crafts	
	Paul's Plaza, 14 Bosworth Street	(045) 78 4101
Taree	Manning Electronics	
	Shop 1, Pulteney Street	(065) 51 2233
Tuncurry	Tuncurry Electronics Shop 11	
	Andcorp Bldg. Beach Street	(065) 54 5006
Ulladulla	Coastal Electronics & Hobbies	
	Shop 1/10 Wason Street	(044) 55 3989
Wagga Wagga	Phillips Electronics 58 Forsythe Street	(069) 21 6558
Walgett	Walgett Electronic Centre 44 Fox Street	(068) 28 1111
Windsor	Hawkesbury Electronics	
	Shop 1, 499 George Street	(045) 77 6722
Yass	Warmington Electrical 116 Comur Street	(06) 226 1116
Young	Keith Donges Electronics 186 Boorowa St	(063) 82 1279



# AUSTRALIA WIDE

## VIC

<b>Ararat</b>	Jerram Electronics 208 Barkly Street	(053) 52 2345
<b>Bairnsdale</b>	LH & LM Crawford 87A Main Street	(051) 52 5677
<b>Benalla</b>	North East Electronics	
	45 Bridge Street West	(057) 62 2710
<b>Castlemaine</b>	Inspect Electric 52 Forest Street	(054) 72 3773
<b>Colac</b>	Colac Electronics 215 Murray Street	(052) 31 2847
<b>Echuca</b>	Gilmour Electronics	
	220 Pakenham Street	(054) 82 2956
<b>Leongatha</b>	Leongatha Photographics & Electronics	
	22 McCartin Street	(056) 623 227
<b>Mildura</b>	Pullman Auto Pro 48 Madden Avenue	(050) 23 2882
<b>Morwell</b>	Roylaine Pty Ltd	
	Cnr Tarwin & George Streets	(051) 339 458
<b>Shepparton</b>	Andrew Guyatt Electronics	
	137 High Street	(058) 21 9497
<b>St Arnaud</b>	Wharton Electrical 79/81 Napier Street	(054) 951 069
<b>Swan Hill</b>	Nyah District TV Service	
	Shop 3/21 Rutherford Street	(050) 32 9303
<b>Rosebud</b>	Seatech Vic Pty Ltd	
	Shop 2/1391 Point Nepean Road	(059) 822 225
<b>Wonthaggi</b>	South Gippsland Photo Services	
	72 McBride Avenue	(056) 72 1411
<b>Warragul</b>	Roylaine 16 Smith Street	(056) 23 4255
<b>Warrnambool</b>	Koroit Street Electronic Service	
	160A Koroit Street	(055) 62 7417

## QLD

<b>Ayr</b>	Delta Electrix Landara Centre	
	Cnr Queen & Parker Streets	(077) 83 1566
<b>Blackwater</b>	Cool Tronics 6 Littlefield Street	(079) 82 5827
<b>Bundaberg</b>	Bob Elkin Electronics	
	65 Bourbong Street	(071) 52 1785
<b>Caloundra</b>	Electro-mart 123 Bulcock Street	(074) 91 8533
<b>Dalby</b>	Hobby & Electronics, Dalby	
	98 Cunningham Street	(076) 625 7770
<b>Emerald</b>	Cool Tronics Pty Ltd Shop 3 & 4	
	Comino Arcade Edgerton Street	(079) 825 222
<b>Gladstone</b>	Electronic Enterprises	
	Shop 5B, Kurrajong Court	(079) 72 6660
<b>Goondiwindi</b>	CTW Electronics	
	Cnr Callandoon & Russell Streets	(076) 713 411
<b>Ingham</b>	Mason's Electronics	
	45 Lannercost Street	(077) 76 3188
<b>Innisfail</b>	Innisfail Hi Fi Centre 43 Edith Street	(070) 61 2014
<b>Kingaroy</b>	MD & MM Siegle 183 Haly Street	(071) 62 4535
<b>Pialba</b>	Keller Electronics 35 Main Street	(071) 28 3749
<b>Mackay</b>	Stevens Electronics 42 Victoria Street	(079) 51 1723
<b>Maryborough</b>	Keller Electronics 218 Adelaide Street	(071) 21 4559
<b>Mossman</b>	Mossman Electronics Shop 2	
	1-3 Front Street	(070) 982 200
<b>Mt. Isa</b>	Outback Electronics 71 Barkly Highway	(077) 43 3331
<b>Stanthorpe</b>	Granite Belt Communications	
	97a Folkestone Street	(076) 81 3333

## SA

<b>Mount Gambier</b>	Hutchessons Comm Centre	
	5 Elizabeth St	(087) 25 0400
<b>Port Lincoln</b>	Basshams TV & Computer World	
	22 Liverpool Street	(086) 83 0075
<b>Whyalla</b>	Eyre Electronics 15B Forsyth Street	(086) 45 4764

## WA

<b>Albany</b>	Micro Electronics 133 Lockyer Avenue	(098) 41 2077
<b>Bunbury</b>	Micro Electronics 45 Stephen Street	(097) 21 6222
<b>Geraldton</b>	Angora Pty Ltd.	
	30 Chapman Road	(099) 21 1278
<b>Mandurah</b>	Mandurah Hi Fi, Mandurah Trade Centre,	
	318 Pinjarrah Road	(09) 581 2206
<b>Margaret River</b>	CPA Electronics Shop 6 Landa Lane	
	155 Bussell Highway	(097) 573 888
<b>Port Hedland</b>	Ivan Tomek the Electronic	
	30 Anderson St	(091) 73 2531

## TAS

<b>Burnie</b>	Electronic City Shop 17	
	City Square Wilson Street	(004) 31 4760
<b>Devonport</b>	A.I. Electronics	
	165 William St, Fourways	(004) 24 8322

## INTERNATIONAL

<b>Suva Fiji</b>	Universal Electronics 31 Knollys Street	(679) 31 2808
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## SERVICE AND SPARES

NSW Service Centre & Spare Parts Phone	(02) 888 3077
FAX	(02) 887 2972
VIC Service Centre	(03) 429 5817
QLD Service Centre	(07) 391 8096
WA Service Centre	(09) 250 1461
SA Service Centre	(08) 349 4762

### Computer Support Hotline:

(02) 888 2002 Mon-Fri 9am to 5pm EST

## WHOLESALE DIVISION!

### Wholesale Prices

You may be eligible for huge savings by buying in bulk! Industry, Business, Government Departments... in fact, any organisation purchasing products in large or commercial quantities, may be eligible for our low Wholesale Prices!

### Ring DSE Wholesale now!

### Business Products

Large Corporation or Small Business — One quick phone call to Dick Smith Electronics can solve your business requirements... computers, computer consumables, software, phones, answering machines, cellular phones, facsimiles, etc, etc. Call now and we can advise you on a range of products suited to your needs and discuss special pricing arrangements.

## ARE YOU MISSING AN OPPORTUNITY?

### Become An Authorised Stockist

Do you already have a business but would like to see it expand its profit making potential? Or perhaps you've been thinking about changing your lifestyle. Outstanding business opportunities now exist to become a Dick Smith Electronics Authorised Stockist. You can become part of Australia's most successful electronics retailer trading in country towns throughout Australia.

### You'll get all the advantages of . . .

- The reputation and identity of Australia's best known electronics retailer.
- Exclusive products and the pricing advantages only possible from a national retail group.
- Plus the opportunity to take advantage of our extensive national promotions.

### For more information please call:

#### HEAD OFFICE

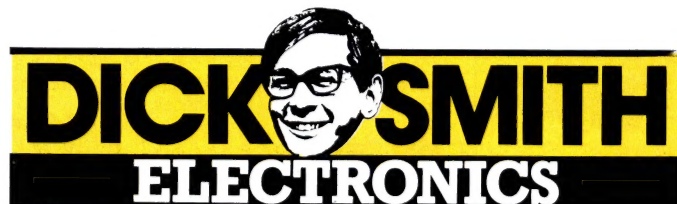
Phone Sydney:	(02) 888 3200
Outside Sydney:	008 26 3922 (Free Call)
FAX:	(02) 805 1986
Or write to:	Dick Smith Wholesale
	PO Box 321
	NORTH RYDE NSW 2113
	AUSTRALIA

#### MELBOURNE OFFICE

Phone:	(03) 428 0140
Fax	(03) 428 0139

## PHONE, FAX & MAIL ORDERS

<b>PHONE ORDERS</b>	<b>FAX ORDERS</b>
SYDNEY: (02) 888 2105	(02) 805 1986
OUTSIDE SYDNEY	<b>MAIL ORDERS</b>
FREECALL: (008) 22 6610	PO Box 321, NORTH RYDE





# Personal Stereos

## Bargain-priced! Budget Stereo Cassette



A fantastic personal stereo at a bargain price from Digitor. It's compact, incredibly easy to operate and comes complete with lightweight stereo headphones and belt clip.

Requires 2 x 'AA' batteries.

**digitor**

Cat A-4087

**\$19<sup>95</sup>**

## The affordable portable Bargain Stereo Cassette



This fantastic portable stereo cassette sounds great and is designed to be easy to operate. It's lightweight and comes with stereo earphones and

has a handy belt-clip. Requires 2 x AA batteries.

**SANYO**

Cat A-4111

**\$29<sup>95</sup>**



## Sony Walkman

Now you can carry around a Walkman in your favourite colour - you have a choice of black, blue or red - with the top quality sound Sony always delivers. Its functions include auto stop, anti-rolling, and a metal/normal tape selector. It comes complete with earphones and a 12 month warranty.

**'93**

**SONY**

Cat A-4202

**\$49<sup>95</sup>**



## Sony AM/FM Radio Cassette

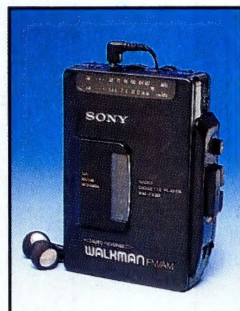
A superb Sony AM/FM cassette radio that represents excellent value for your money! It comes in three fashionable colours - black, blue and red. Plus, it offers auto/stop controls, mono/stereo switch and a normal/metal tape selector. Includes a pair of earphones and 12 months warranty. Requires 2 x AA batteries.

**'93**

**SONY**

Cat A-4205

**\$69<sup>95</sup>**



## Sony AM/FM Auto Reverse

Personal stereo sound at its best! This Sony Walkman offers AM/FM stereo, 2-mode automatic reverse, anti-rolling mechanism, mono/stereo switch and a normal/metal tape selector. Complete with a pair of earphones and 12 months warranty. Requires 2 x AA batteries.

**'93**

**SONY**

Cat A-4206

**\$99<sup>95</sup>**



## With Mega Bass! Sony AM/FM Auto

Incredible sound! Try one of these Walkmans with Dolby\* and Mega Bass and you'll hear it for yourself! It has FM stereo/AM, 2 mode auto-reverse, auto-stop cassette and anti-rolling mechanism. Plus, it offers a metal/normal tape selector and mono/stereo switch. It comes complete with a pair of headphones and is covered by a 12 month warranty. Requires 2 x AA batteries.

**'93**

**SONY**

Cat A4207

**\$139<sup>95</sup>**



## Exceptional Features! Sony Recording Walkman

This Sony Walkman can do more than the rest! It boasts a plug-in power microphone which is powered by the unit and a beat switch for AM recording. Plus, it features FM stereo/AM, auto-stop cassette, anti-rolling mechanism, mono/stereo switch and a normal/metal tape selector. It comes complete with a pair of lightweight stereo headphones and 12 months warranty. Requires 2 x AA batteries.

**'93**

**SONY**

Cat A-4211

**\$159<sup>95</sup>**



## AM/FM Stereo Radio & Cassette

A great-sounding personal stereo cassette with AM/FM stereo radio from Sanyo. It's lightweight with convenient top-mounted volume and station selector for ease of use. Features include: Stereo earphones, stereo indicator, DC jack and beltclip. Requires 2 x AA batteries.

Cat A-4125

**\$39<sup>95</sup>**

## With Auto Reverse! AM/FM Stereo Radio Cassette

A superb portable that sounds great and has fantastic features. With Sanyo's Bassxpander system you'll be amazed at the sound. It features auto-reverse, stylish design, fast-forward and rewind. Comes with stereo earphones and has a belt clip. Requires 2 x 'AA' batteries.

Cat A-4132

**\$79<sup>95</sup>**



## With Digital Pedometer & clock

Sports Stereo Cassette Radio  
The perfect personal stereo for exercise! Not only does it have AM/FM stereo radio, stereo cassette with Bassxpander, belt clip, stereo earphones and DC jack but you also get a built-in pedometer and clock with LCD display. Requires 2 x AA batteries.

Cat A-4131

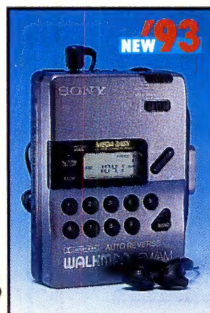
**\$99<sup>95</sup>**

## With Dolby! Sanyo Bassxpander

An exceptional personal portable with an amazing range of features. With auto-reverse and tape direction selector, Bassxpander for superb sound, graphic equaliser, AM/FM stereo radio, band selector, Dolby\* noise reduction, DC jack, headphones and belt-clip. Requires 2 x 'AA' batteries.

Cat A-4142

**\$99<sup>95</sup>**



## Packed With Features! Sony AM/FM Auto-reverse Cassette Player

Experience the ultimate in sound with this top-of-the-line Sony Walkman - it offers you so much more! It has a digital tuner with 18 pre-set memories for virtually instant access to your favourite radio stations, auto-scanning tuning, Dolby\* and two-mode auto-reverse for uninterrupted listening. All this plus standard features such as auto-stop cassette, anti-rolling mechanism and normal/metal tape selector. With headphones and a 12 month warranty. Requires 2 x AA batteries.

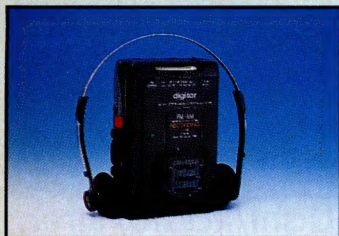
**SONY**

Cat A-4213

**\$199**

\* Dolby is a registered trademark of Dolby Sound Laboratories.



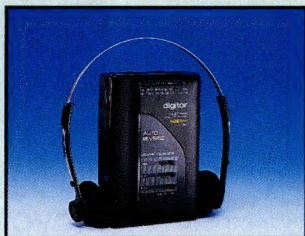


## The Go-anywhere Recording Stereo! Digitor Stereo Radio Cassette

With 3-band graphic equaliser and the convenience of a notetaker/recorder. Plus, it has AM/FM stereo radio, stereo indicator, inbuilt microphone and two inbuilt speakers. Complete with lightweight stereo headphones. Requires 2 x AA batteries.

**\$79<sup>95</sup>**

Cat A-4200



## Incredible Features! Slimline Personal Stereo System

Incredible features at a bargain price! It has AM/FM stereo radio, stereo indicator, auto-reverse, tape direction selector and 3-band graphic equaliser. With stereo headphones and belt clip. Requires 2 x 'AAA' batteries.

**digitor \$69<sup>95</sup>**

Cat A-4097

## Digital Tune! Personal Stereo



Top-of-the-line personal stereo. A digital-tuned radio with 10AM & 10FM station memories and LCD display with clock and alarm. Plus, a quality stereo

cassette with auto-reverse, tape direction selection and Bass Boost sound. It comes with high-quality headphones and has a DC power jack. Requires 2 x AA batteries.

**digitor \$109<sup>95</sup>**

Cat A-4167



## Sanyo Auto Reverse Cassette

Top quality from Sanyo! With an FM stereo/AM synthesiser tuner and bass expander, this model offers the best in personal stereo sound. Its features include: Preset scan and 10-station memory with back-up, auto-reverse, clock and alarm and an LCD display. It comes complete with lightweight stereo headphones and 12 months warranty. Requires 2 x 'AA' batteries.

**\$129<sup>95</sup>**

Cat A-4141



## Sanyo Portable CD

Quality CD stereo sound that you can carry around! With eight times oversampling, multipurpose LCD display, fast-forward, next track selection, skip, line out, sound equalisation system and recharge capability. Plus, all functions are accessible from the remote control built into the earphone lead so track selection is a breeze. Requires AC adaptor or 2 x AA batteries.

**\$269**

Cat A-5215



## Sony Discman

A Sony Discman that offers all the functions you could possibly want. Its features include; 8 times over-sampling, Mega Bass, dual Digital/Analogue converters and an automatic music sensor. This superb model allows you to program up to 22 songs, it has a shuffle-play function and a time keeper. It can play continuously for 8 hours on just 4 AA batteries and comes complete with a pair of earphones and 12 months warranty.

**\$299**

Cat A-5221



## Sanyo Portable CD Player

Experience superb sound with this portable CD player from Sanyo. This compact, high-quality stereo boasts an 8 x over-sampling digital filter, bassxpander and auto/off functions. It comes complete with a 12-month warranty.

**\$229**

Cat A-5216

## Sony Car Discman

This outstanding Sony Discman provides perfect sound in your car. Its features include: 8 times over-sampling, Mega Bass, a dual damper anti-shock mechanism and dual Digital/Analogue converters. It's designed specifically for your car with a convenient lighting system, automatic dimmer, keyhold (to prevent accidental function change) and a car accessory kit. The Discman comes with a 12-month warranty.

**\$499**

Cat A-5223



## Mini Speakers

Two 2.25" dynamic speakers, each in a separate enclosure, allowing full stereo separation. They simply plug into the headphone jack on your portable. They don't require a separate

power source and they come with cable and standard 3.5mm plug.

**\$14<sup>95</sup>**

Cat C-4164

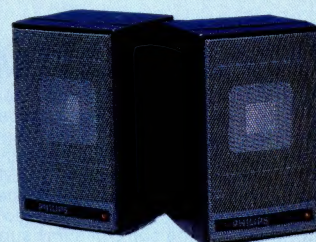
## With built-in amplifier! High Quality Mini Speakers

Get real stereo from your personal stereo using these superb speakers with built-in amplifier. These digital extension speakers give outstanding sound with their built-in 5-watt amplifier. You can select amplifier or direct and control the volume from your stereo. They simply plug into the headphone socket and require 4 x AA batteries or 6V DC adaptor.

**\$49<sup>95</sup>**

**PHILIPS**

Cat C-4160



## Inbuilt Amplifier Stereo Speakers

A great-sounding pair of speakers which simply plug into the phones jack of your personal stereo. Perfect when you don't want to wear headphones, or you want others to listen in. With built-in amplifier (5W PMPO combined), separate volume controls. Requires 4 x 'C' batteries and has a DC jack.

**\$49<sup>95</sup>**

Cat C-4158



## High Quality! Stereo Speakers With Stands

Get the most from your personal stereo. Each speaker has a 10 watt (PMPO) built-in amplifier, separate bass and treble boost and a ribbed-edge case to minimise vibration. Bass response is enhanced with integral bass ports and speaker stands. Special 'power off' feature helps maintain battery life. With 3.5mm stereo plug and DC jack. Requires 8 X 'AA' batteries (4 per speaker).

**\$59<sup>95</sup>**

Cat C-4188





*Networking  
made easy!*

## LANtastic for Windows

Networking is the simple, cost-effective way for you to boost your productivity and keep peripheral costs to a minimum! With LANtastic for Windows you have at your disposal one of the most powerful, easy to use and inexpensive network systems available.

Networking is not solely the domain of huge corporations. If you're a small office, or even a portable computer user, you'll find a LANtastic system that suits your budget and your needs. Share resources between your laptop and your desktop with LANtastic Z, or share resources between 2 to 300 systems with the LANtastic starter kit. It's easy, it's fast and it uses very little memory (13K for workstations and 40K for servers).

## How Can LANtastic Save You Money?

### • Share Resources

Such as printers, hard drives, CD-ROMs, data files, fax boards, and software programs.

### • Improve Communications

Communicate between computers, save time and keep telephone lines free.

### • Minimise Costs

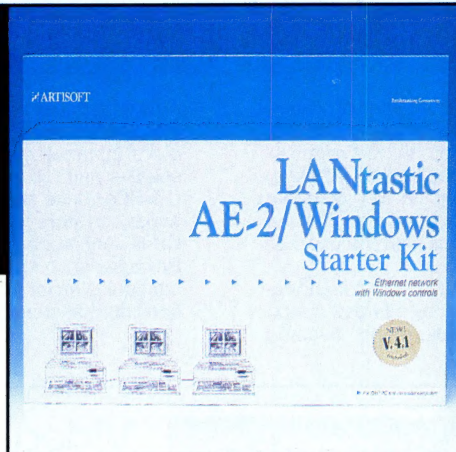
Greatly reduce peripheral costs by sharing them between systems. Realise software savings by purchasing local area network (LAN) versions of applications - you'll save money on purchasing individual copies of programs.

### • Increase Productivity

Free up computer work time by placing file and printer operations into background mode.

### • Improve Security

Provides user accounts, password protection and many other access controls, including audit trails of all activity on the network.

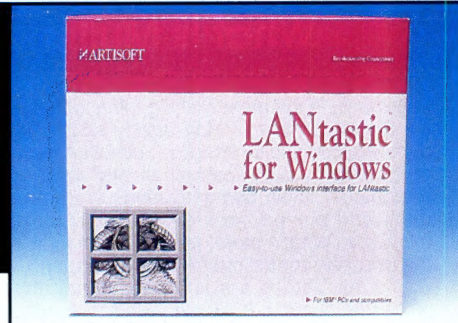


## LANtastic Windows Starter Kit

The most cost-effective networking system available! Comes complete with Windows-compatible LANtastic software, card and cabling (for two machines). Will share files, programs, hard and floppy drives, printers and CD-ROMs on as many as 300 PCs. (With the use of Additional user kits, see catalogue No X 8697 on this page). It's very quick, with a super-fast transfer rate of 10Mbps. Connecting more computers to the system is as simple as installing an additional user kit.

Cat X-8693

**\$1199**



## LANtastic Z

Share resources between two computers! It's ideal for laptop to desktop, or for small offices. LANtastic Z provides all the advantages of networking at a sensational low price. Comes with software and cables, and has full-featured network facilities. You can have it up and running in minutes!

Cat X-8670

**\$169**

## Additional User Kit

Allows you to connect an additional system to your network. Comes with card and cable.

Cat X-8697

**\$449**



## 120Mb Tape Drive

It's fast and incredibly inexpensive! Colorado Tape Drives offer exceptional value and performance. The Jumbo 120 comes with data compression software and meets the QIC-40 standard which allows you to interchange with a huge range of compatible drives. With a transfer rate of 250Kb/s (on an XT) or 500Kb/s (AT and above) a 40Mb back-up will take around 25 minutes (typical). It's compatible with virtually any PC (requires 512Kb RAM and DOS 2.1 or higher) and simply slips into any vacant half-height drive bay. What's more, the Jumbo uses your existing floppy controller to save both money and an expansion slot. Compatible with Novell Network 286/386, LANtastic, IBM Token-Ring and 3COM.

Cat X-8692

**\$399**

120MB Cartridge Pack of two tapes. Complete with head cleaner.



Cat X-8682

**\$149**

## DATA BACK-UP

## 250Mb Tape Drive

The big gun in tape back-up! The Jumbo 250 is fully compatible with Novell,

Network 286 and 386, LANtastic, IBM Token-Ring, and 3COM. You get

a super-fast transfer rate of 500Kb/s (1Mb/s with optional compression card). Comes complete with compression software cables and utilises your existing floppy controller saving money and space. What's more, it will read Jumbo 120Mb tapes. Its features include: menu screens, DOS-UNIX file interchange, unattended back-up scheduler, boot disk restore and more. Not suitable for XT's.

Cat X-8696

**\$559**

250Mb Cartridge Pack of two tapes. Complete with head cleaner.



Cat X-8684

**\$159**





## The Practical Radio

**SANYO**

Cat A-4115

**\$49<sup>95</sup>**

A functional, practical, reliable and exceptionally well-built radio by Sanyo! It's compact and has a large speaker for great sound quality. Features include: AM/FM reception, Hi/Low tone control, large grid dial for easy tuning, telescopic antenna and carry handle. Works from mains or batteries. Requires 4 x AA batteries.



## AM Stereo & FM Stereo

Experience the world of AM Stereo with this incredibly compact and high-quality personal radio from Sangean. Its features include AM/FM stereo, Hi/Low tone and Mono selection, rotary tuning & volume control and belt clip. It comes with stereo earphones and requires 2 x AAA batteries.

Cat A-4366

**\$59<sup>95</sup>**

## 19 Memories!

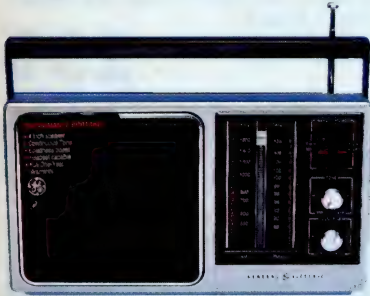
## Digital Tune AM/FM Stereo

The exceptional Sangean Digital Tune AM/FM stereo radio has 19 station memories, push-button scan tuning, the highest quality stereo sound (FM only) via headphones (supplied), inbuilt speaker, lock switch and auto power shut-off. It fits easily in the pocket and comes with belt clip. Requires 2 x AA batteries.

Cat A-4320

**\$99<sup>95</sup>**

## High Performance AM/FM Radio



You'll get quality sound from this high-performance GE radio. There's a large 100mm speaker, large tuning dial, continuously variable tone control and loudness control for really beefy sound on both AM and FM stations. With a convenient carry handle and AC/DC operation (requires 6 X C-size batteries for DC operation).

Cat A-4034

**\$49<sup>95</sup>**



## Outstanding Performance! Super Radio II

This amazing high-performance, long-range AM/FM portable gives astounding reception just about anywhere. If you're having trouble getting good reception because the station is just out of reach, this is the radio you want. Features include: Telescopic antenna, external AM/FM antenna terminals, a huge 6 1/2" high-sensitivity woofer and 1 1/2" Piezo tweeter, plus separate bass and treble controls and switchable AFC (helps you lock onto the strongest signal). AC/DC operation, requires 6 'D' size batteries.

Cat A-4035

**\$139<sup>95</sup>**



## AM/FM & Aircraft Band VHF Radio

**\$19<sup>95</sup>**

**digitor**



This radio will open up the high-flying world for you! It covers the Aircraft Band as well as normal AM/FM broadcast bands. It includes a telescopic whip antenna and an earpiece. Requires 4 x AA batteries.

### Features:

- All AM/FM broadcast channels
- Aircraft band 108-135MHz
- Tone selection switch
- 450mW audio output
- 10-transistor circuit

Cat D-2836

## Multi-Band Receiver

With this fantastic receiver you'll be able to hear a whole range of fascinating broadcasts that are happening around you everyday. You'll hear local FM radio stations, TV sound transmissions (channels 1-5A), AM CB channels, aircraft, VHF marine, amateur radio, taxis and much more! Features a telescopic antenna for improved VHF reception and a squelch control to reduce noise between stations. Comes with handy carry strap and information on typical VHF frequency allocations. Requires 4 x AA batteries.

**Frequency Ranges:** 54-108MHz, 108-176MHz, 26.95-27.45MHz

Cat D-2838

**digitor**

**\$39<sup>95</sup>**



## Shortwave & VHF Multiband Radio



One of our most popular multibands, this superb 6-band receiver offers access to shortwave and commercial VHF channels keeping you in touch with the world. It covers all 40 CB channels, shortwave and VHF. Plus, with the built-in direction finder, you can plot your position against known AM radio stations. A variable BFO (Beat Frequency Oscillator) also allows reception of SSB marine and CB channels. Includes a shoulder strap, earpiece and shortwave listening guide. Mains powered - requires 4 x D batteries for portable use.

### Features:

- Signal Strength meter & Fine-Tuning control
- External antenna socket
- AM and FM broadcast bands
- VHF (55-218MHz): TV sound (Ch. 1-10), aircraft, HAM, VHF, Marine
- Shortwave 1(2-6MHz): HF marine, HAM, International SW stations
- Shortwave 2(15-30MHz): CB, HAM, International SW Stations

**\$139<sup>95</sup>**

Cat D-2832



# Portable Stereos

**'93**  
NEW



**digitor**

## Digitor Cassette CD & Radio

A brilliant sound system with 3-band equaliser, FM stereo, telescopic antenna and 5 watt speakers. The CD player includes; random play selection, repeat /skip functions, 20 track program and top loading. It comes complete with a 12 month warranty.

Cat A-5501

**\$199**

**'93**  
NEW



**digitor**

## Digitor Twin Cassette CD & Radio

Excellent sound from Digitor! This superb CD and Cassette player is packed with features. The CD player includes: 20 programmable memories, LCD read-out and top-loading. This model also offers: AM/FM radio, high-speed cassette dubbing, continuous play, 3-band graphic equaliser and Bassboost control. It comes complete with telescopic antenna and 2-way speaker system. With 12 months warranty.

Cat A-5505

**\$259**

**'93**  
NEW



**SANYO**

## Sanyo CD, AM/FM Radio Cassette

Excellent design and superb sound! This Sanyo portable stereo is light, compact and easy to carry around for great sounding music anytime. It offers synchronised CD to tape dubbing, search & skip functions and full auto-stop mechanism to save wear and tear on the cassette and deck mechanism. Plus, it has an LED display, FM stereo/AM radio and stereo headphone jack for personal listening.

Cat A-5232

**\$249**

**'93**  
NEW



**SANYO**

## Sanyo Dual-deck & CD

If you're looking for a portable stereo that's not too expensive, yet offers the luxury of remote control operation and advanced features, this Sanyo is for you! It includes AM/FM radio, dual-cassette deck with high-speed dubbing, and bass expander. It has remote-control for both CD and volume operation and the CD offers an LED display and 16-selection programming so you can listen to your favourite tracks without interruption. It comes complete with a 12 month warranty.

Cat A-5275

**\$369**

**'93**  
NEW



**SANYO**

## Sanyo Cassette & CD

This portable Sanyo dual-deck cassette radio with CD player is a top choice! It has detachable speakers for easy transportation and it boasts 16-selection programming so you can listen to all your favourite songs, a LED display for CD, a graphic equaliser and Bass boost. This great sound system comes complete with a 12 month warranty.

Cat A-5278

**\$399**

**'93**  
NEW



**SANYO**

## Top Of The Range! Sanyo Mid System

A Sanyo 3D heavy bass sound system that will provide you with that top quality sound you desire! It's fully remote-controlled and has a full-logic twin auto-reverse cassette deck. It allows you to tune in to 20 radio stations on memory and has a karaoke mixer. This super system has 80W (P.M.P.O) output power and comes complete with a 12 month warranty.

Cat A-5282

**\$599**



## digitor Compact Radio Cassette

Cat A-4029

**\$49<sup>95</sup>**



Here's a real bargain! This superb Digitor radio cassette is just what you need when you want good sound in a reliable unit without paying for a thousand features that you'll never use. It's mains or battery operated (requires 4 'C' size batteries), has AM/FM radio and a record/playback cassette. The large single speaker gives a surprisingly good sound, and there's a headphone socket so you can listen in private.

**NEW '93**



**Best Value!**

## Digitor Portable Stereo

**NEW '93**

Check out the features and quality of this portable stereo - you won't buy better than Digitor! With AM/FM stereo radio, FM stereo indicator, auto-stop cassette deck, inbuilt condenser microphone, headphone jack and separate left/right volume controls. What's more, it'll operate from the mains or battery (requires 5 x 'D' size batteries)

Cat A-5235

**digitor \$59<sup>95</sup>**



## Digitor Cassette & Tape

An incredibly inexpensive dual-deck cassette player that is packed with features! It includes, 3-band graphic equaliser, high-speed dubbing, one-touch record and continuous play mechanism. Plus, it offers AM/FM stereo tuning. Excellent value!

Cat A-5238

**NEW '93**

**digitor**

**\$79<sup>95</sup>**



## Cassette Radio

**SANYO**

You'll get value for money with this superb Sanyo AM/FM portable cassette radio! It offers one-touch recording, full auto-stop in all modes and mechanical pause control. Plus, it offers 18W (P.M.P.O) output power on a 2-way 4-speaker system. Includes 12 months warranty.

Cat A-4180

**NEW '93 \$79<sup>95</sup>**

**SANYO**



## Dual-Deck Cassette Radio

Affordable quality from Sanyo! With high-speed dubbing, one-touch recording, automatic level control and full auto-stop mechanism. Plus, it includes variable monitoring, soft-eject cassette doors, continuous tone control and a stereo headphone jack. It comes complete with a 12 month warranty.

Cat A-4182

**NEW '93 \$99<sup>95</sup>**



## Dual-Deck Cassette **SANYO**

A high-fashion cassette deck from Sanyo with exceptional features! It has an auto-reverse mechanism that allows you to listen to your cassettes without interruption, Bassxpander sound system to provide heavy dynamic bass sound and a 2-way speaker system. Plus, it has high-speed, 1-touch record, headphone and microphone jacks. Complete with 12 month warranty.

Cat A-4184

**NEW '93 \$149<sup>95</sup>**



# What is Shortwave Radio?

Shortwave radio is one of the most exciting and informative mediums available. What's more, it's also one of the most accessible. Once you discover shortwave, you'll almost certainly want more. So, what is shortwave radio? Shortwave radio stations are just like the local stations that you're listening to currently, except that shortwave radio caters for an international audience, not just a local community.

Fortunately, over the next few years shortwave reception will be at its peak. This is due to sun spot activity cycles and their effect on the atmospheric conditions (this will be explained later in this article).... so it's the perfect time to discover the advantages of shortwave listening!

Most countries have their own shortwave radio stations..... Radio Australia, the BBC world service, Voice of America, Radio Moscow, etc. For instance, Radio Australia broadcasts in nine languages to an estimated 50 million regular listeners. Because shortwave is targeted at this international audience, it provides a diversity and depth of programming that doesn't exist in local radio. Shortwave is also a fantastic introduction to the world of amateur radio, and many people decide to take up this fascinating hobby after listening to shortwave radio.

## What equipment is needed?

One thing that makes shortwave radio an attractive hobby is that it's very affordable. Small radios with a few shortwave bands are quite inexpensive and they're a great way to discover what shortwave has to offer. They usually have AM/FM reception as well, so they can be used as a normal radio for your favourite local stations but allow you the extra freedom to comb the dial discovering the fantastic world of shortwave radio. More sophisticated receivers are also available and these will usually provide better reception, but at a higher price.

## Choosing a Receiver

These days, there is a great range of shortwave radios available. There can be an enormous difference in the cost of these and the one you choose will largely depend on your budget and any specific interest you have in shortwave.

For those with a casual interest, or if you're just starting out in SW listening, you may be able to get by with a radio which covers just a few shortwave bands. These are usually adequate for listening to the stronger SW stations.



The mid-range receivers usually cover only those frequency segments used by the major SW broadcasters rather than the entire High Frequency (H.F.) band. Consequently, the frequency segments, or bands, covered are much more easily tuned. This process is called 'Band Spreading'. Some of these may also have digital tuning, which enables you to key-in the exact frequency that you want to listen to.

Top of the range SW receivers will generally cover all of the H.F. band, including SW and commercial frequency bands. They will have better selectivity, sensitivity and dynamic range, making it easier to tune stations. These days, they usually have digital tuning and offer a host of extra features as well.

The better the receiver, the greater its ability to receive only the frequency that it is tuned for and to reject other frequencies. The selectivity, or ability to separate stations close in frequency, can mean the difference between hearing a station clearly, and having it masked by a station on a nearby frequency.

Though sensitivity is often quoted in specifications, it is not the overriding factor since poor selectivity and dynamic range can make high sensitivity useless. In general, a receiver with modest sensitivity, good dynamic range and good selectivity is best.

Shortwave radio stations broadcast in the AM or Amplitude Modulation mode just as local radio stations do. Other transmissions, like those by amateur radio operators and commercial users, may use a different mode called Single Side Band or SSB. To receive these, your radio must either have a special SSB mode, or be equipped with a Beat Frequency Oscillator (BFO). The same applies if you want to listen to morse code.

## The Antenna

There are many strong stations that can be heard with just the inbuilt telescopic antenna of a portable radio, but if you want to pick up some of the weaker stations, a simple, inexpensive outdoor antenna will be a great help.

A typical simple antenna is just a long piece of wire strung between two supports. It should be placed as high as possible above the ground, and as far away from power lines and other noise sources as possible. The ends of the antenna must not be tied directly to the supports but should be separated from the supports by a short length of nylon rope and egg insulators. The antenna wire should be PVC insulated so that it will be less likely to corrode.

Between the antenna and the back of the radio, it will be necessary to have a lead-in wire. Any flexible PVC covered wire will do. Remember, for safety, don't run the antenna or lead-in wire anywhere near power lines.

In addition to a good antenna, a good earth may improve low frequency reception by reducing noise. An earth connection is ideally a short wire running from the receiver's earth terminal to a metal pipe spiked, in a damp location, in the ground.

Not all radios have provision for an antenna and earth connection. However, simply running a good antenna wire near a portable radio can improve reception. Play it safe and always disconnect an outdoor antenna when not in use, and during electrical storms.

*Cont. next page*



## Time Difference

Most broadcasters use Universal Time Co-ordinated (UTC), more commonly referred to previously as Greenwich Mean Time (GMT). This is a 24 hour system with the format hhmm, with hh representing the hours and mm the minutes. The eastern parts of Australia are normally 10 hours ahead of UTC, so 1020UTC will be 2020 or 8:20pm on the east coast, and 2300UTC will be 9.00am the following day.

## Frequency & Wavelength

All radio and television stations transmit on a particular frequency (or range of frequencies). Frequency is a measure of how often something happens, or how many complete cycles occur in a particular time period.

In radio communications we are interested in how many complete cycles occur in one second. The unit for this measurement is the HERTZ (Hz) which formerly had the more descriptive name of Cycles per Second.

The larger units kilohertz (kHz = Hz x 1000), (formerly kilocycles) and megahertz (MHz = kHz x 1000) are often used in radio communication.

Wavelength is related to frequency. It is a measure of the length of one cycle of a wave in the medium through which it travels. Radio waves travel through space at a speed close to the speed of light which is approximately 300,000,000 metres per second.

Most stations identify themselves as transmitting on a particular frequency, however some broadcasters express this as a wavelength, for example, a broadcast may advise they are 'closing down transmissions on 13 metres', which means that their signals in the 21MHz S.W band will cease shortly. To calculate the wavelength (in metres) simply apply this formula;

$$\text{Wavelength} = \frac{300,000,000}{\text{Frequency (Hz)}} \quad \text{or} \quad \frac{300}{\text{Freq.(MHz)}}$$

Local AM radio stations broadcast on frequencies ranging from 531kHz to 1602kHz (wavelength of 565 to 187 metres), and this is known as the medium wave band.

Shortwave radio stations broadcast on frequencies between 2MHz and 30MHz (wavelengths of 150 to 10 metres). These wavelengths are shorter than those in the medium wave band hence the name shortwave.

Published frequency lists, such as those in the World Radio and TV Handbook, and those issued by some S.W broadcasters, generally list frequencies in kHz. As many receivers, especially those using digital tuning, show frequencies in a MHz format, it is important to remember the simple conversion between kHz and MHz.

$$\begin{aligned} \text{eg. } 1000\text{kHz} &= 1 \text{ MHz} \\ 21350\text{kHz} &= 21.350 \text{ MHz} \end{aligned}$$

## The Frequency Spectrum

Frequency	Frequency band
10kHz - 30kHz	VLF Very Low Frequency
30kHz - 300kHz	LF Low Frequency (longwave)
300kHz - 3MHz	MF Medium Frequency (medium wave)
3MHz - 30MHz	HF High Frequency (shortwave)
30MHz - 300MHz	VHF Very High Frequency
300MHz - 3GHz	UHF Ultra High Frequency
3GHz - 30GHz	SHF Super High Frequency

Although shortwave radio operates only on the Medium Frequency (MF) and High Frequency (HF) bands, it is worthwhile knowing where these fit inside the overall spectrum. Shortwave radio stations do not have access to the entire 3-30MHz (HF) band since other services need a part of the spectrum as well.

The following frequencies are those common to shortwave radio broadcasts:

Frequency (kHz)	Wavelength (Metres)
5900 - 6200	49
7100 - 7350	41
9400 - 9900	31
11600 - 12100	25
13570 - 13870	22
15100 - 15800	19
17480 - 17900	16
21450 - 21750	13
25600 - 26100	11

## The Ionosphere

The ionosphere consists of several varying layers of ionized gas situated between 50 and 450km above the earth. It is the effect of the ionosphere on radio waves which allows shortwave signals to travel such long distances around the world.

The ionosphere is created when UV light from the sun reacts with the upper atmosphere. The outer layers of the ionosphere reflect shortwaves while the lower layers tend to absorb them. When no sunlight is present, the lower layers disappear completely, while the outer layers remain through some, or all, of the night.

Consequently, during the night, because there are no lower layers to absorb the radio waves and the upper layers can be very reflective, shortwave signals will travel further. You have probably already observed this phenomenon with your AM radio. During the day, reception from your local stations is quite good, but in the evening you can pick up much more distant AM stations. For instance, if you live in Sydney, you may be able to pick up stations well beyond Newcastle and Wollongong in the evening, but not necessarily during the day.

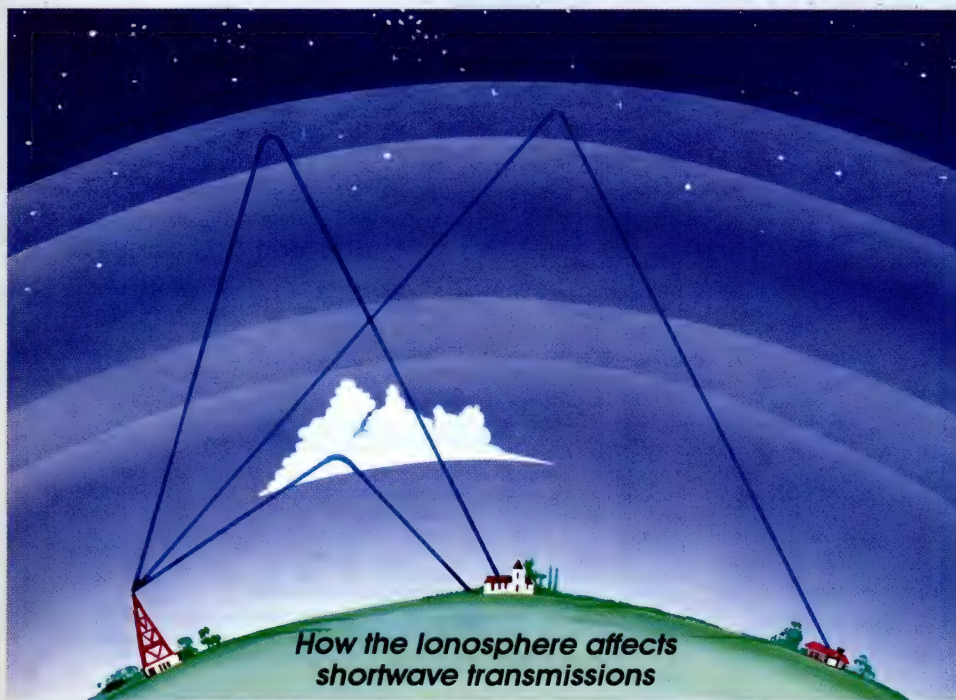
High solar sunspot activity increases the level of ionization of the ionosphere, improving long distance communication. Sunspot activity occurs in cycles lasting approximately 11 years, and the present cycle is expected to provide good conditions for HF (shortwave) radio communication for the next few years. This is good news for shortwave listeners.

## Fading

Radio signals can reach a receiver along the ground (ground waves) and via reflection from the ionosphere. Sometimes a signal can reach the receiver by two or more paths, and depending on the distance of each path, the signals may add or cancel. This can cause the signal strength to alternate between high and low levels. This phenomenon is called fading and is observed on the medium and shortwave bands.

## Further reading

If you'd like to know more about the fascinating and informative world of shortwave radio we recommend the World Radio TV handbook (1993 edition, DSE Cat No.B-2093 or Passport to World Band Radio, Cat No. B-2052). They list all the radio and TV stations by country and frequency, as well as regular satellite broadcasts. Up-to-date information on operating times, transmitter powers, languages, addresses, time signal stations and reception conditions make these books the perfect companion for your shortwave radio.







## Digitor Portable Receiver

A high quality 4-band radio receiver (AM/FM/SW1/SW2) that is small enough to take anywhere! Among its features includes; 20 station memories, timer on/off, keypad lock, headphone jack, LCD clock with sleep function, DC jack and telescopic antenna. It requires 4 x AA batteries.

**digitor**

Cat A-4336 **\$79<sup>95</sup>**



## With alarm clock & SW! 4 Band Digital Tune

**digitor**

An outstanding shortwave radio which is exceptional in every aspect... including value! Features include up/down pushbutton digital tuning, auto scan, 20 station memories, digital alarm clock with sleep function and 4 bands...AM, FM stereo, SW1 & SW2! As well it has a large LCD display, display light, keypad lock, headphone jack for stereo FM, high quality inbuilt speaker, DC jack, telescopic antenna and carry strap. Requires 3 x AA batteries.

Cat A-4338 **\$89<sup>95</sup>**



## MICRO 9 Band Receiver

Carry the world in your pocket! The Sangean MS-101 is a brilliant shortwave radio which is smaller than most AM/FM radios and great for portable shortwave listening. It covers 7 shortwave bands as well as your local AM/FM bands. In fact, although it looks small, highly sensitive micro-circuitry allows it to receive many interesting international shortwave broadcasters including The Voice of America, BBC, Radio Australia and Radio Moscow. What's more, you get one-touch power & AM/FM/SW selectors, power safety lock, FM stereo & SW tuning indicator. As well, it has a quality tuning mechanism, easy to read dial markings, telescopic antenna, and a DC jack for mains power (with optional adaptor). Includes earphones for FM stereo and a soft carry case. Requires 2 x AA batteries.

### Specifications

Size (125 x 71 x 27mm)  
Power DC 3V dry batteries AA size  
External Power AC adaptor. 3V 100mA centre negative  
Frequencies FM 87.5-108 MHz  
MW 530-1605 KHz

SW1 (5.90-6.20 MHz)  
SW2 (7.05-7.40 MHz)  
SW3 (9.50-9.90 MHz)  
SW4 (11.65-12.05 MHz)  
SW5 (13.55-13.85 MHz)  
SW6 (15.10-15.60 MHz)  
SW7 (17.50-17.90 MHz)

Output Powers 60 mW (10%THD) for built in speaker, 25mW per channel for headphone  
Headphone Jack 3.5mm stereo, 32 ohm  
Antenna System FM telescopic antenna  
SW Telescopic antenna  
MW Built-in ferrite bar antenna

Cat D-2827 **\$99<sup>95</sup>**



## 10 Band Portable Shortwave Receiver

A high quality 10 band shortwave receiver that's can pull in radio broadcasts from around the world yet is small enough to take anywhere (just 160 x 85 x 27mm)! The Sangean SG-789 receives local AM and FM stations (FM stereo with optional headphones) as well as 8 popular international shortwave bands and, with it's bandspread tuning system and an LED tuning indicator to guide you, finding the station you want quickly and accurately is easy. The SG-789 combines all this with excellent sound reproduction, a solidly built chassis, sockets for headphones and AC adaptor. Comes with soft carry case. Requires 3xAA batteries.

**Shortwave:** 2.3 - 5.0MHz, 5.8 - 6.2MHz, 7.05 - 7.5MHz, 9.45 - 9.9MHz, 11.55 - 12.05MHz, 15.05 - 15.55MHz, 17.45 - 18.05MHz, 21.45 - 21.95MHz.

**AM:** 530-1600kHz  
**FM:** 88-108MHz

Cat D-2834 **\$79<sup>95</sup>**

**SANGEAN**

It has taken Sangean little more than 10 years to become one of the world's leading shortwave radio manufacturers. During this time they have continuously carried out extensive research and development allowing them to stride ahead of other manufacturers. They currently produce radios for many international companies, providing them with products featuring both the quality and the high performance necessary to satisfy the growing demand of world markets.

When you buy a Sangean product you can be sure you're getting value for money. Their shortwave products are both very reasonably priced and of superb quality. Dick Smith Electronics are proud to be representing Sangean in Australia.





## With Auto Tuning! Compact 45 Memory Shortwave Receiver

**NEW '93**

Listening to the world on shortwave radio has never been easier! The super compact ATS-606 from Sangean makes finding your favourite shortwave (and local) stations as easy as pushing a button. Let it scan through the bands for you or, with the new Auto Tuning System (ATS), it will locate and put the nine strongest signals on both the AM and FM bands into memory. You can also key in a stations frequency directly from the keypad or put up to 45 frequencies into memory for instant push-button access. It gives continuous shortwave coverage from 1.715 - 29.995MHz, and 13 international SW band divisions can be directly accessed at the touch of a button. There's an informative, back-lit LCD screen showing frequency and time with a variety of icons to indicate the functions being accessed. You also get a dual alarm clock, sleep timer, dual time settings so you can preset any two time-zones, DX/local switch which allows you to set the sensitivity to suit differing conditions, and a lock switch to prevent accidentally changing stations. Comes with stereo earphones for FM stereo operation and has an antenna socket for connection of an external antenna. Requires 3 x AA batteries.

### Features:

- Automatic Tuning System
- 45 station memories
- Comprehensive LCD screen
- Scan tuning & Direct keypad tuning
- Dual alarm clocks
- Dual time setting
- Adjustable sleep timer
- Soft carry case

### Frequency Ranges:

FM: 87.50 - 108MHz  
 LW: 153 - 513kHz  
 MW: 522 - 1710kHz  
 SW: 1.715 - 29.995MHz

Includes 13 pre-set shortwave bands

**SANGEAN**

Cat D-2847

**\$249**



## Listen to Australia... Listen to the World! 45 Memory Shortwave Receiver

Catch all your local AM and FM stations plus all the fascinating listening on Shortwave from Australia and around the world with this exceptional portable. The Sangean ATS-808 provides continuous coverage from 150kHz to 30MHz, so you'll catch all the action on the shortwave bands as well as the local longwave and mediumwave (AM) bands. What's more you'll get FM stereo (with headphones) as well. It's easy to access the stations from 45 memories, by direct keypad frequency entry, by auto-search scanning, or by fine or coarse rotary dial tuning. You can select wide or narrow filters on SW bands as well as attenuation for extremely strong stations to ensure optimum reception quality under differing conditions. The large three-colour LCD screen displays frequency readout, signal strength, memory location, SW band and the time. The clock has an alarm and a 1-hour sleep timer. You can also lock all controls or just the rotary tuning against accidental movement. And it comes with stereo headphones and protective case. Requires 6 x AA batteries or mains adaptor (M-9626 recommended).

### Features:

- Keypad, auto-scanning, or rotary tuning with fine/coarse control
- 45 memories
- Dual time settings and desk stand
- Alarm & sleep timer
- Keypad & dial tuning locks
- Signal strength meter
- Stereo headphones
- External shortwave antenna socket
- Built-in whip antenna

- 13 SW band divisions with direct access buttons
- AM, and FM stereo broadcast bands
- Longwave: 150-519kHz
- Mediumwave: 520-1710kHz
- Shortwave: 1.711-29.999MHz continuous or in 13 bands
- FM: 87.5-108MHz

**SANGEAN**

Cat D-2829

**\$299**



## With cassette player! All-Band World Receiver

Have you ever wondered what you can hear on shortwave radio, or what happens on the HF bands covering marine, aircraft, amateur, military and commercial broadcasts? With the outstanding ATS-818CS all-band world receiver from Sangean you'll be able to listen into these (and all Shortwave bands) and find out. It also gives you the extra advantage of being able to record your favourite shortwave or local AM/FM program or simply play your favourite music tape. This is definitely a professional quality receiver yet it's designed to be very easy to operate with 45 station memories and a large digital display which shows frequency, time, signal and battery strength, lock status, alarm status and station memory number.

The ATS-818CS with its continuous coverage design receives AM/FM bands, FM stereo (with optional headphones), longwave and all shortwave bands.

Push-button auto or manual scanning makes finding stations fast and easy, and there's a two-speed rotary tuning knob which can be locked in position so you don't accidentally lose the station. Or, you can simply enter the frequency direct from the keypad. The dual-conversion design also offers switchable filters and an adjustable RF gain control to ensure optimum reception quality, even under differing reception conditions. There's also a dual-time clock with sleep function and wake to music or alarm, so you can drift-off listening to your favourite station without having to worry about missing the bus the next morning. It requires 3 x 'AA', and 4 x 'D' size batteries or DC adaptor for mains operation.

### Features:

- Covers AM/FM, Longwave (150 to 519kHz) and Shortwave (1.62 to 29.99MHz) bands.
- Five tuning methods for the easiest operation.
- 45 station memories.
- Dual time display for local and UTC and full alarm clock functions.
- AM wide/narrow IF filters for clearer reception.
- Pushbutton selection of major SW bands from 120m to 11m.
- Adjustable RF gain prevents overloading from very strong signals.
- BFO (Beat Frequency Oscillator) control for receiving SSB and Morse Code transmissions.
- Dual conversion design for improved receiver performance
- Large LCD screen with frequency, time, station preset channel, signal and battery strength and status icons.
- Pushbutton cassette recorder with chrome tape facility and auto stop.

**SANGEAN**

Cat D-2842

**\$399**

Also available: ATS-818 (no cassette recorder) Cat D-2828 **\$349**



## Portable Shortwave Antenna

Want to boost the performance of your portable shortwave radio? Then you need one of these: The Sangean ANT-60 is a wind-up reel-style antenna that extends to a full 7 metres (23ft), yet fits in a shirt pocket! It connects via a 3.5mm mini plug or the supplied adaptor that clips onto your portable's telescopic antenna.

Cat D-4400

**SANGEAN**

**\$19<sup>95</sup>**



# Notetakers & Recorders



## digitor Cassette Recorder

Excellent value for money! A small portable cassette recorder suitable for notetaking, computer data recording or just listening. With automatic level control recording, tape counter, mic jack and AC power cord. Choose from grey, black or charcoal colour. It comes complete with a 12-month warranty.  
Cat A-4031

**\$39<sup>95</sup>**

## Desktop Recorder



Easy on the pocket and perfect for desktop recording, the GE Slim Tape Recorder uses standard cassettes, has a built-in condenser mic, pause, auto level control, slide-away carry handle and comes complete with AC converter. Requires 4 'C' size batteries.  
Cat A-4028



**\$49<sup>95</sup>**



## SONY Cassette Recorder

A high-quality cassette recorder with all the functions you need for desktop recording. It includes: One-touch recording, edit function, tape counter and auto-stop cassette. Plus it comes with a built-in AC adaptor and AC power cord. Includes a 12-month warranty.  
Cat A-4022

**\$59<sup>95</sup>**



## SONY Notetaker With Edit Function

Cat A-5450

**\$79<sup>95</sup>**

Ideal for recording conferences or lectures, this is a reliable Sony notetaker with one-touch recording. It's easy to operate, offering cue review and auto-stop functions, plus an edit function and front speaker. It comes complete with a 12-month warranty.



## digitor Exceptional Value! Voice Activated Micro Recorder

Cat A-5345

**\$69<sup>95</sup>**

A fantastic low price for a full-featured micro-recorder from Digitor. You won't find better value with its two tape speeds, tape counter, voice activated recording, mic and earphone jacks, pause, fast-forward and rewind, plus external DC power jack. Requires 2 x AA batteries.



## SONY Voice-Activated Sony Notetaker

**\$109<sup>95</sup>**

You won't have to write anything down when you own this quality Sony notetaker! It will take care of all your lectures or conferences with its voice-activated operation. Other features include; edit, cue, review and automatic-stop functions, one-touch recording and a front speaker. The notetaker comes complete with a 12-month warranty.



## Voice-activated recording! 2 Speed Micro Recorder

Cat A-5376

**\$99<sup>95</sup>**

One of our most popular micro-recorders! Automatic voice-activated recording makes this ideal for interviews, lectures or meetings. Fits easily in the pocket and has two tape-speeds, built-in mic with adjustable sensitivity, AC/DC operation, pause control, tape counter, recharge capability and more. Requires 2 x 'AA' batteries.



## SANYO Voice Activated Micro Recorder

Cat A-4133

**\$109<sup>95</sup>**

All the features and superb quality that comes with Sanyo equipment. It's very well put together and the controls are placed to make operation as easy as possible. Features include 2 tape speeds, tape counter, voice-activated recording, battery indicator, ear/mic jacks and DC jack. Requires 2 x AA batteries.



## SONY Top-Of-The-Line! Notetaker With LCD Display

Cat A-5452

**\$179<sup>95</sup>**

If you want the best sound reproduction, you'll find it in this exceptional pocket notetaker. Not only does it have incredibly clear sound, it also offers easy-to-use one-touch recording. Plus it has cue, review and automatic stop functions, a flat microphone, tape counter and voice-operated recording. Conveniently, the date and the time of the recording are encoded on tape and displayed on the LCD panel. It comes complete with a 12 month-warranty.



# Notetakers, Recorders & Tapes



## Compact Mini Recorder

Cat A-4709

**\$69<sup>95</sup>**

**SANYO**

One of the superb Cue & Review series from Sanyo! It's about the size of a personal stereo and it takes standard cassettes. The controls are set out for ease of use and it has an earphone jack as well as an external DC jack so you can power it with a mains adaptor. The top-mounted volume control allows for easy one-handed operation. Requires 2 x AA batteries.

## Bargain Priced Mini Recorder

Cat A-5305

**\$59<sup>95</sup>**



This one's real value and it's packed with features! With well-placed controls for ease of use, built-in mic, pause control, automatic recording level, earphone jack, AC jack and built-in recharge circuitry. Uses standard cassettes. Requires 2 x AA batteries.



## Pocket-Sized Micro Recorder

Slimline and easy to handle, it features two tape speeds, easy to use slide controls (for fast forward, rewind & pause), one-touch record, recharge capability, DC jack, built-in omni directional mic, external microphone jack... the lot! Requires 2 x 'AA' batteries.

Cat A-5370 **\$79<sup>95</sup>**



## Super compact! 2-Speed Micro Recorder

A quality micro recorder from Sanyo! It's a breeze to use, with simple one-touch recording, 2 tape speeds, quick review, quick record, electrical pause, DC jack and external microphone jack - all in a tiny design! Cat A-4112

**SANYO \$89<sup>95</sup>**



## Voice-Activated Mini Recorder

Cat A-5356



**\$89<sup>95</sup>**

It's about the size of a personal stereo, but designed for quality recording. The GE Mini Cassette uses standard-sized tapes and has voice-activated recording, tape counter, built-in microphone with adjustable sensitivity, microphone socket, recharge capability, DC jack and comes with handy carry strap. Requires 2 'AA' batteries.



## Voice-Activated Recording! Mini Cassette Recorder

Cat A-4114

**SANYO \$99<sup>95</sup>**

If you prefer a machine which uses standard cassette tapes, then here's value and reliability from Sanyo! Features include: voice-activated recording, tape counter, electrical pause, quick record/review, LED battery indicator, inbuilt mic, DC jack and external microphone jack. Requires 2 'AA' batteries.

## Microcassette Notetaker



Ideal for taping lectures, meetings or conferences, this is an inexpensive slim-designed micro-cassette notetaker with a built-in microphone and one-touch recording. It also offers edit, cue and review functions and two tape speeds. Excellent value for your money! Comes complete with a 12-month warranty. Cat A-5454

**SONY**

**\$119<sup>95</sup>**

## Sony Micro Notetaker



**SONY**

Save yourself the hassle of rapidly scrawling down notes - this way you can sit back and listen with the assurance that everything's down on tape. This notetaker features voice-operated recording, one-touch recording, edit, cue and review functions, two-tape speed and a microphone jack. It comes with a 12-month warranty. Cat A-5455

**\$139<sup>95</sup>**

## Sony Micro Notetaker



**SONY**

You can count on this Sony notetaker for reliable operation and perfect recording. It's the ultimate in quality with time-indexed, voice-operated recording. It also includes: Edit, cue and review functions, one-touch recording, two speeds and a tape counter. Covered by a 12-month warranty. Cat A-5456

**\$189<sup>95</sup>**

## MICRO CASSETTE TAPES



**Maxell Micro Cassettes** Maxell are renowned for their high quality cassette tapes, and these micro-cassette tapes are no exception. Pack of three MC60UR micro-cassettes. Cat C-3368

**\$15<sup>95</sup>/pk**

**Digitor Micro Cassettes** Compare these for construction and sound quality - you won't buy better. In handy packs of two. 30 Min. 2 x C30 Micro. Cat C-3370 **\$4.95** 60 Min. 2 x C60 Micro. Cat C-3372 **\$6.95**

**SONY Micro Cassette** These superb 60 minute micro cassette are suitable for micro recorders and answering machines.

Cat C-3369 **\$5<sup>95</sup>ea** Cat C-3365 **\$15<sup>95</sup>/pk of 3**

**Mini Cassette Tapes** High-quality tapes from Philips that are suitable for mini recorders/notetakers, as well as many modern telephone answering machines, etc. Available as single tapes.

30 Minute Mini. Cat C-3358 **\$9.95** 60 Minute Mini. Cat C-3359 **\$16.95**



## Sony Micro Cleaning Tape

Protect your notetaker from damage due to dust and grime with this cleaning tape.

Cat C-7096 **\$5<sup>95</sup>**



# Clock Radios



## Mini Clock Radio

Wake to music or a buzzer with this mini clock radio. It's compact, so it's ideal for those who travel around! Plus, it features a red LED digital display, AM/FM radio and snooze button to provide you with that little extra bit of sleep! Complete with 12 months warranty.

Cat A-4692

**NEW '93** digitor

**\$19<sup>95</sup>**



## Clock Radio

A superb Digitor clock radio with rounded design. You can wake to the sound of the radio or buzzer plus, you have access to convenient sleep and snooze functions. It receives AM/FM radio and has a digital display. All this at a very low price! Comes complete with a 12 month warranty.

Cat A-4694

**NEW '93** digitor

**\$24<sup>95</sup>**



## Travel Clock Radio

Ideal for taking on holidays! A quality cordless battery-operated AM/FM travel clock radio. With precise slide tuning, telescopic antenna and an easel for comfortable viewing. Its pull-out carry handle and handy carry pouch make it easy to transport

Cat A-4670

**NEW '93** digitor

**\$24<sup>95</sup>**



## Digital Clock Radio

A reliable Sony 'dream machine' clock radio with red clock display that's ideal for the bedroom. Its features include: AM/FM radio, power back-up and a snooze function. It's covered by a 12 month warranty.

Cat A-4680

**NEW '93**

SONY

**\$34<sup>95</sup>**



## Two-Alarms In One!

## Dual-Alarm Clock Radio

Now you can have an alarm each! This Digitor clock radio conveniently allows you to set two different alarms on the one clock radio! Plus, it features AM/FM radio, sleep snooze functions and radio/buzzer alarm option. It features an attractive slimline design, is super-reliable and comes at an ideal price! It's covered by a 12 month warranty

Cat A-4695

**NEW '93**

digitor

**\$29<sup>95</sup>**



## Three-In-One!

## AM/FM Clock Radio With Cassette

This is not just any alarm clock! It features both AM/FM radio and a cassette player! It's ideal for the bedroom or the office where, as well as needing a clock, you may want to listen to music. It has a red LED display, easy control features and power battery back-up (battery not included). With 12 months warranty.

Cat A-4697

**digitor** **NEW '93**

**\$39<sup>95</sup>**

## Digicube Dream Machine



Looking for something completely different? Well, Sony have a unique black cube-shaped clock radio just for you! It has more than good looks though - its features include: AM/FM radio, power backup, a snooze function and radio/buzzer alarm option. Looks impressive in either bedroom or at the office. The clock radio is mains powered and comes complete with a 12 month warranty.

Cat A-4681

**\$49<sup>95</sup>**

SONY

**NEW '93**



## Outstanding Quality and Performance

**SOUND BARRIER**  
QUALITY AUTO STEREO SOUND

Authorised Distributors  
Australia and New Zealand



**With Anti-theft Bracket!**

### Bargain-Priced & Feature-Packed!

All this and good looks too! The X-33 gives you AM/FM stereo radio, auto-stop cassette player, 15 watts of power, separate tone and balance and illuminated control panel. Includes quick release anti-theft mount and instructions.  
Cat A-9552

**\$79<sup>95</sup>**



**Anti-theft release bracket!**

### Auto Reverse Car Stereo

Digital station readout on the AM/FM stereo radio makes tuning much easier. The X-49 combines a fantastic range of features including auto reverse stereo cassette, night illumination, separate tone and balance control, local/DX selector, mono stereo switch, 20 watts (max) power output, metal select and more. With quick release anti-theft bracket that allows you to remove the stereo in seconds.  
Cat A-9570

**\$129<sup>95</sup>**



**With CD 'in' & power!**

### High Power Car Stereo

A stunning car stereo in all respects! The Sound Barrier X-150 with AM/FM stereo radio with pushbutton tuning and 24 station memories (18FM/6AM), seek/manual tuning button, auto reverse stereo cassette, fader control, 4-way speaker driver, CD power socket and CD 'in' jack and an incredible 70 watts (max) power rating (35/35W). Plus a special anti-theft detachable control panel.  
Cat A-9600

**\$199**



**The ultimate!**

### Car Stereo With Dolby

Power, performance and an astounding array of features. The incredible X-200 car stereo is just the thing when you demand the best. The stereo cassette has everything including Dolby B, auto reverse and metal tape select. Add to this an AM/FM stereo radio with pushbutton tuning, 24 station memories (18FM/6AM), seek and scan functions, a huge 35 watts per channel (max), CD input and CD power output, 4 speaker driver, fader control.... the list goes on. A truly outstanding device!  
Cat A-9620

**\$229**



### Car CD System

We're offering you the best in car stereo at an incredible price! This AM/FM CD system has 25 watts per channel, 30 station pre-sets and 16-track programming! Everyone will want it - that's why this hi-fi easily slots in and out of your dash - you can take it with you or lock it up safely in your boot.  
Cat A-9635

**\$449**

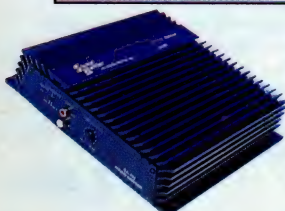


**Incredible Value!**

### With 10-CD magazine!

Select up to ten CDs, put them in your new Targa CD AM/FM stereo's magazine and you can flip between your favourite albums! This is crystal-clear CD sound at an incredibly low price! It's features include: 8 times oversampling digital filter, 1-bit twin D/A converter, 30 pre-set (12FM/6AM + BSB 6FM + 6AM), versatile horizontal/vertical mounting system and Digital direct optical link capability. Plus, it offers 'Double floating' anti-vibration system and Pre-amp fader.  
Cat A-9638

**\$749**



### Power Amplifier

For those who seek the best sound quality, this amplifier offers a powerful 300 watts, CD compatibility, DC/DC power converter, bridgeable stereo/mono circuit and Mosfet circuit. Plus, it has output short and overload protection and a sub-woofer function.  
Cat A-9082

**\$249**



### Power Amplifier

Get more power from your car stereo with an outstanding 140-watt hi-fi stereo amplifier with CD compatibility, input gain control, bridgeable stereo/mono circuit, Mosfet circuit, DC/DC converter plus a sub-woofer function.  
Cat A-9080

**\$159<sup>95</sup>**



**SOUND BARRIER**  
QUALITY AUTO STEREO SOUND

*Just a sample of our great car speaker range!*



## 4-Way Speaker System

These superb VR-X800 150 x 230mm flush-mount car speakers will handle 200 watts (peak) and represent exceptional value! With a 150 x 230mm woofer, 66mm midrange, 32mm dynamic tweeter and a solid state horn-dome tweeter, they provide excellent acoustic response. They also have a frequency range of 30 - 22,000Hz, an impedance of 4 ohms and require 78mm mounting depth.

Cat A-9685

**\$89<sup>95</sup>**



## 3-way Car Speakers

You'll get superb sound from these 150 x 230mm VR-X700 speakers. They come with an attractive wire - mesh grille or maximum protection. These high-powered, flush-mount speakers have a 150 x 230mm woofer, 66mm midrange and horn-dome tweeter. They'll handle 120 watts, have a frequency range of 30 - 22,000Hz, an impedance of 4 ohms and require a mounting depth of 66mm.

Cat A-9680

**\$69<sup>95</sup>**



## 160mm 3-Way Speakers

The 160mm VR-X600 flush-mount speaker system will handle 100 watts (peak) into 4 ohms. With a robust metal grille cover, 160mm woofer, 50mm midrange and 18mm flat type tweeter. The frequency response is 40 - 22,000Hz and they require a mounting depth of 48mm.

Cat A-9675

**\$54<sup>95</sup>**



## 160mm Dual Cone Speakers

Quality, flush-mount dual-cone car speakers which fit into tight spaces. The VR-X500 speakers will handle 80 watts (peak) into 4 ohms and have a frequency response across the range 40 - 20,000Hz. They require only 44mm mounting depth and, like all Sound Barrier speakers, come with wire and cut-out template.

Cat A-9670

**\$39<sup>95</sup>**



## 130mm 3-Way Speaker

At just 130mm and with a power handling of 75 watts (peak), the VR-X400 speakers are ideal for small to medium-sized modern cars. They have a 130mm woofer, 32mm dynamic tweeter and 18mm flat-type super tweeter. The frequency range is 45 - 22,000Hz, they have an impedance of 4 ohms and require a mounting depth of just 42mm.

Cat A-9665

**\$44<sup>95</sup>**



## 100mm 3-Way Speakers

Small enough to fit in the tiniest car! The VR-X200 3-way speakers with 100mm woofer, 32mm dynamic tweeter and flat-type super tweeter will handle 60W (peak). The frequency response is in the range 50 - 22,000Hz and the impedance is 4 ohms. Requiring a mounting depth of just 42mm, they can fit in the tightest of spaces.

Cat A-9655

**\$39<sup>95</sup>**



## 130mm Dual Cone Speakers

These VR-X300 dual-cone speakers are beautifully styled and come with a metal grille for maximum protection. They're 130mm high-compliance dual-cone speakers and will handle 60W (peak) into 4 ohms. They have a broad frequency response in the range 40 - 20,000Hz and offer exceptional value for money. Requires 40mm mounting depth.

Cat A-9660

**\$34<sup>95</sup>**



## 100mm Dual Cone Speakers

An inexpensive way to get great sound from your car stereo! The VR-X100 dual-cone speakers will handle 45 watts (peak) with a frequency response across the range 50 - 20,000Hz. They come with metal grille cover, have an impedance of 4 ohms and require a mounting depth of only 35mm.

Cat A-9650

**\$29<sup>95</sup>**



## Bargain Wedge Speakers

If you don't want to cut large holes in your trim, then these surface-mount speakers are the go. They can be easily mounted on the rear parcel shelf and they give surprisingly good sound at a low price. They also make an inexpensive alternative if you want to put a four-speaker system in your car.

Cat A-6980

**\$19<sup>95</sup>**



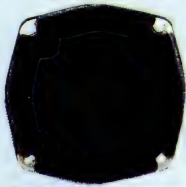
## Chassis Speakers

Perfect as a replacement when that old radio speaker starts to rattle and croak! These Chassis Speakers each have cloth covering and 4-8 Ohm resistance.

5" Round

Cat A-7145

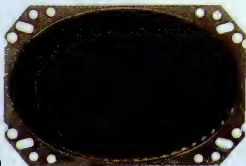
**\$9<sup>95</sup>**



6" x 4" Oval

Cat A-7130

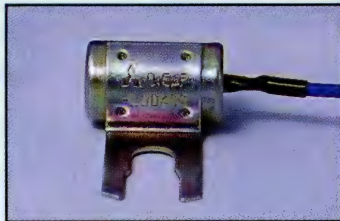
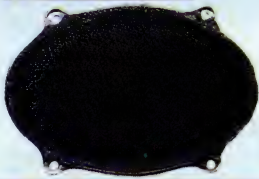
**\$11<sup>95</sup>**



7" x 5" Oval

Cat A-7135

**\$14<sup>95</sup>**

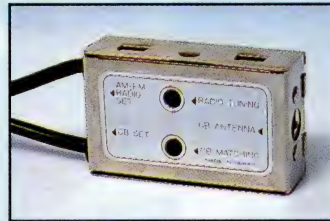


## Noise Suppressor

Helps eliminate noise in the radio, CB, etc. from your car ignition system. This 0.5uF capacitor is designed to fit directly to the noise source or noisy device.

Cat A-7902

**\$3<sup>95</sup>**



## Radio/CB Antenna Splitter

Allows you to run both your radio and CB off the one antenna. Fits easily under the dash and eliminates the need for extra holes in the body.

Cat A-7455

**\$19<sup>95</sup>**

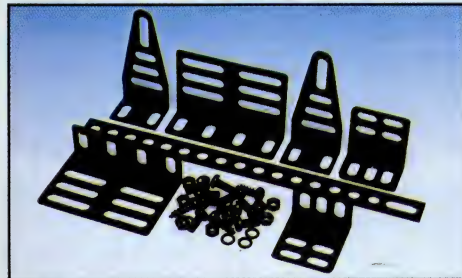


## 4-Speaker Volume Control

There's no doubt that four speakers give a great sound in your car. This 25 watt dual speaker control lets you adjust the volume from the front to the rear speakers.

Cat A-7834

**\$29<sup>95</sup>**



## Universal Mounting Bracket

7-Piece universal bracket set which is ideal for mounting CBs, stereo cassettes, CD players, radios, etc. in virtually any vehicle.

Cat A-7200

**\$9<sup>95</sup>**



## Use your CD in the car! Philips CD Cassette Adaptor Set

An absolute must for anyone who has a portable CD player. This fantastic adaptor set allows you to play your portable CD through your existing car stereo cassette. It saves batteries as well, because it powers the CD player from the car battery. You can set it up in minutes and it's fully compatible with all car cassette players. Just think - all the sound quality of your CD in your car.

Cat C-9206

**\$49<sup>95</sup>**



### A. Lock Down Antenna

3-Section telescopic lock-down antenna with 300mm underhang. Comes complete with mounting hardware and keys.

Cat A-7300 **\$11<sup>95</sup>**

### B. High Efficiency

With special, built-in loading coil for improved AM/FM reception. 3-Section antenna with 180 degree adjustable spring base. Extends to 134cm.

Cat A-7347 **\$19<sup>95</sup>**

### C. Universal Swivel Antenna

3-Section spring base antenna which extends to 134cm. With 180° base adjustment.

Cat A-7346 **\$17<sup>95</sup>**

### D. Universal Side Mount Antenna

3-section universal antenna for mounting on side pillars, etc. Extends to 127cm and comes with cable and instructions.

Cat A-7344 **\$12<sup>95</sup>**

### E. AM/FM Rubber Duckie

A fixed length, flexible antenna that won't rust or break! Perfect for both AM or FM and suits most mounting positions.

Cat A-7345 **\$14<sup>95</sup>**

### F. Automatic Electric Antenna

Rises and retracts automatically! Can be wired to trigger from either ignition or radio on/off switch. Vandals won't get this one!

Cat A-7366 **\$49<sup>95</sup>**

### G. High Quality Car TV Antenna

This superb universal Car TV Antenna comes with everything you need for installation... Universal Boot/Hatch mounting base, detachable antenna, all hardware including cable, brackets etc and an electronic fine tuning controller.

Cat G-5548 **\$99<sup>95</sup>**

### H. 4-Metre Extension Lead

Fully compensated (low signal loss) 4-metre extension lead, ideal for rear mounted antennas.

Cat A-7452 **\$9<sup>95</sup>**

### I. 1-Metre Extension Lead

Fully compensated (low signal loss) 1-metre extension lead, for when your antenna is a little far away.

Cat A-7450 **\$4<sup>95</sup>**

### J. Benelec Stainless Steel AM/FM Antenna Kit with Base

A corrosion-resistant design that's suitable for both marine and auto use, reward your radio with one of these!

Cat A-7308 **\$29<sup>95</sup>**

### K. Mobile One 30" AM/FM Whip Antenna Pack

Helical-wound fibreglass Antenna. Ideal for long distance reception.

Also available - 60" model  
Cat A-7312 **\$39.95**

Cat A-7310 **\$29<sup>95</sup>**

### L. AM/FM Black Antenna with Booster

Resembles a cellular phone antenna and can be roof or fender mounted. Has booster coil for enhanced reception.

Cat A-7320 **\$19<sup>95</sup>**

### M. Roof Mount Antenna With Spring

This replacement roof-mount antenna is perfect for vans, the spring makes it harder to damage on low ceilings.

Cat A-7322 **\$14<sup>95</sup>**



You get more with ....

# digitor



## Digitor Pro-Monitor Headphones

High quality stereo monitor headphones with 50mm speaker drivers that are designed to get the best from digital source material such as CDs, etc. They're incredibly comfortable with fully adjustable headstrap. What's more, they're built to last... and to perform. Oxygen-free copper cabling is used throughout and they come with gold plated 3.5mm plug and 3.5mm x 6.3mm adaptor. 32 ohms impedance with a frequency response 20 - 20,000Hz.

**\$49<sup>95</sup>**

Cat C-4154

Also Available....

## Digitor Hi-Fi Stereo Headphones

Cat C-4152

**\$39<sup>95</sup>**

With volume controls!

## Digitor Hi-Fi Headphones

Get just the right volume with separate left and right inbuilt volume controls. They're just the thing for private listening to TV's, etc. With extra padding for greater comfort and large 50mm speaker drivers. They come with extra long cable, gold plated 3.5mm plug and gold plated 3.5mm x 6.3mm adaptor. 32 ohms impedance and frequency response 20 - 20,000Hz.

**\$39<sup>95</sup>**

Cat C-4162



## 40mm Digital Stereo Headphones

Lightweight and super comfortable! These 40mm stereo headphones are ideal for CD players, home stereo, etc. They have large 40mm speaker drivers which fit comfortably to the ear and give exceptionally good sound... especially when you consider the great low price. They come complete with 3.5mm plug and 3.5mm x 6.3mm adaptor for connection to your home stereo. The impedance is 32 ohms and frequency response 20 - 20,000Hz.

**\$29<sup>95</sup>**

Cat C-4148



## Digitor 27mm Lightweight Headphones

Beautifully designed, very light and incredibly comfortable to wear. What's more, they're bargain priced! These superb stereo headphones will do justice to all your favourite music. The 27mm drivers cover the entire ear, without bulk, and they come with a 3.5mm plug for your personal stereo equipment and a 3.5mm x 6.3mm adaptor for your stereo. 32 ohms impedance and frequency response 20 - 20,000Hz.

**\$19<sup>95</sup>**

Cat C-4146



## Mini Stereo Headphones

Sensational value! Ideal for personal and portable stereo or your home hi-fi. These inexpensive stereo headphones comes with adjustable headband and replaceable foam earpads. It comes complete with 3.5mm stereo plug and 3.5mm x 6.3mm stereo adaptor. 32 ohms impedance and frequency response 20 - 20,000Hz.

**\$9<sup>95</sup>**

Cat C-4142

Also Available: C-4147 **\$4.95**



## With detachable earphones! 2 Way Stereo Headphones

A great idea! You can wear them as mini stereo headphones, or detach the speakers and instantly they're stereo earphones. They're just the thing for your portable stereo. The small 13mm drivers give great sound reproduction. With 32 ohms impedance and frequency response 20 - 20,000Hz. They come with 3.5mm plug and 3.5mm x 6.3mm adaptor.

**\$9<sup>95</sup>**

Cat C-4133



## No wires! Cordless Headphone System

**NEW '93**

These are perfect for listening to the TV, VCR, etc. A cordless infrared headphone system that's beautifully built and extremely well designed. Simply plug the transmitter into the sound source and you're free to move anywhere about the room with these superb headphones. Comes complete with mains adaptor, and stereo adaptor.

**\$149<sup>95</sup>**

Cat C-4222

Also available:

Extra set of headphones. Cat C-4223 **\$79.95**

## With protective case! Mini Stereo Earphones

**\$4<sup>95</sup>**

Cat C-4250

Great value mini stereo earphones that are ideal for personal stereos. They come with neat hard plastic case to store and protect them when not in use. With 32 ohms impedance and frequency response 20 - 20,000Hz. Fitted with a right-angled 3.5mm stereo plug.



## Very high quality! Digital Stereo Earphones

**\$9<sup>95</sup>**

Cat C-4350

Outstanding sound quality from these superb stereo earphones. They're just the thing for portable CDs, radios, cassettes, etc. They come in a hard plastic case and they're fitted with a right-angled 3.5mm stereo socket. With 32 ohms impedance and a very wide frequency response of 20 - 20,000Hz.







## Dynamic Closed Earphones

Cat C-4408

**\$39<sup>95</sup>** **SONY**

Sony has designed a special pair of dynamic closed earphones made with large earpads to block out most outside noise so as to minimise interference with your listening. The earphones have a 23mm diameter driver unit and 20-20 KHZ frequency response and they're covered by a 12-month warranty.



**SONY**

## Top Quality Headphones

Cat C-4410

**\$79<sup>95</sup>**

Dynamic closed headphones that keep the sound in and minimise outside interference. With a 30mm diameter driver unit and a gold-plated uni-match plug, all attached to a 3-metre cord. The headphones are covered by a 12-month warranty.

**SONY**

## In-Ear Earphones



Quality Sony earphones that you place inside your ear for better sound and greater convenience. They're designed for comfort, have a 13.5mm driver unit, and come complete with a 12-month warranty.

Cat C-4430 **\$29<sup>95</sup>**

## Tear-Drop Shaped Earphones



A handy set of earphones with a convenient reel-type case. This special set of earphones are teardrop shaped and have a silent cap to minimise noise leakage. They come in black, white and red and are covered by a 12 month warranty.

Cat C-4405 **\$59<sup>95</sup>**

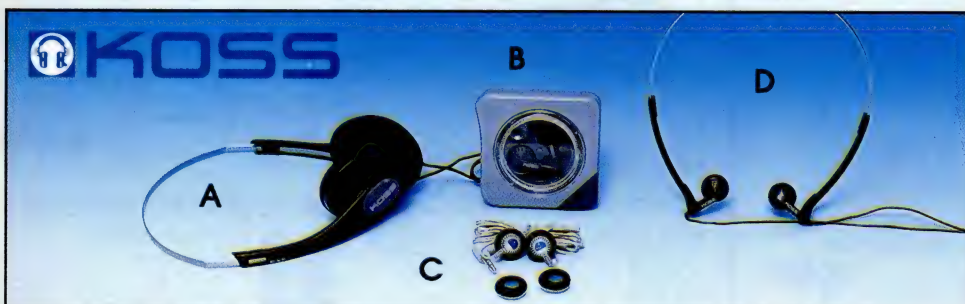


## digitor Headphones

Cat C-4152

**\$39<sup>95</sup>**

Superb Digitor stereo headphones for comfortable listening. They feature soft leather earpads and adjustable leather headband. Plus, they minimise outside sound interference by providing you with better isolated sound.



When you purchase a set of Koss stereo headphones, rest assured you're getting nothing short of the best in value and quality. After all, John Koss and Martin Lange invented the stereo headphone. Who better to give you the latest in headphone technology than the people who invented them?

## A. Stereo Headphones

If you're into headphones which cover your ears, these headphones from Koss offer exceptional quality and value. The pneumatic earcushions cut out most noise so you hear nothing but pure stereo. With adjustable headband and 3.5mm & 6.4mm plugs. Frequency Response 20 - 20,000Hz

Cat C-4139 **\$29<sup>95</sup>**

*With Protective Case!*

## B. Quality Stereo Earphones

When you want only the best in sound reproduction from your portable, reach for a set of CR/6 stereo earphones. They're incredibly lightweight. The protective carrying case features a wind-up spool for added protection and convenience. Frequency Response 20-20,000 Hz

Cat C-4137 **\$29<sup>95</sup>**

*Ultra-Lightweight!*

## C. Stereo Earphones

Superb featherweight KMP/5 Stereo Earphones! They have a secure and comfortable fit that's perfect for cyclists, joggers and other music lovers on the move. Complete with a spare pair of cushions. Frequency Response 20-20,000Hz

Cat C-4136 **\$19<sup>95</sup>**

*Detachable headband*

## D. High Performance Stereo

The CR/7 s are at the top end of the Koss range of stereophones. They feature a detachable headband giving you the option to use them as headphones or earphones. A 6.5mm x 3.5mm adaptor allows you to plug into your portable or home hi-fi. Frequency Response 20 - 20,000Hz.

Cat C-4138 **\$39<sup>95</sup>**

## Mac 5 Stereo Headphone

High quality head-phones from the people who invented headphones. Exceptional design and construction, brilliant sound quality and a lifetime warranty. If you're a music lover, then we know you'll love these superb headphones. With a frequency response of 20-20,000Hz and impedance of 60 ohms.

Cat C-4141 **\$69<sup>95</sup>**

## TD/70 Stereo Headphone

A sensational set of top of the line Koss headphones for listening to portable stereos or CD players. A closed cushion stereophone gives maximum isolation and deep bass response. It has a frequency response of 20-20 000 Hz, impedance of 100ohms and less than 0.2% distortion at 100dB SPL.

Cat C-4143 **\$99<sup>95</sup>**

## Crystal Earpiece

Cat C-2765 **\$4<sup>95</sup>**

## Magnetic Earpiece

Cat C-2760 **\$2<sup>95</sup>**



## Bargain Earphones

With no headband, you'll hardly realise you're wearing them. They give surprisingly clear sound reproduction without an expensive price tag. Complete with spare ear pads, 3.5mm plug and 6.5mm adaptor plug.

Cat C-4135 **\$5<sup>95</sup>**



## Replacement Ear Pads

Give you're old headphones a 'facelift'. Spare pads suitable for a wide range of headphones.

13.5mm Cat C-4182 **\$2.95**  
27mm Cat C-4184 **\$3.95**





# Microphones

## DYNAMIC MICROPHONES

### With Switch Dynamic Cassette Microphone

Ideal as a replacement mic. Can be used with any cassette recorder, etc with a low impedance microphone input (99% of those on the market do). It comes with a 3.5mm plug and 2.5mm plug (for remote switching).

#### Specifications:

Input Impedance: 250 ohm  
Sensitivity: -78dB +/- 3dB  
Frequency response: 200 - 10,000Hz

Cat C-1015

**\$11.95**



## ELECTRET MICROPHONES ARISTA

### FM Wireless Microphone

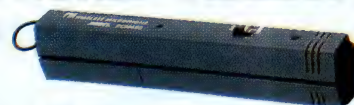
Saves messy cables! A great FM wireless microphone that gives you room to move around. It has a sturdy aluminium case, adjustable frequency and high/low/off switch. Can be tuned to any FM radio (receiver) and the range is up to 300 feet (91m) where there are no obstructions. It's powered by a single 9V battery (not included).

#### Specifications:

Frequency Range: 92 - 104MHz  
Frequency Response: 50 - 15,000Hz  
Modulation: FM

Cat C-1580

**\$29.95**



### Wireless Microphone

This slimline unit can be used as a standard wired type microphone or a wireless system that can be used on any FM radio tuner. Complete with on/off switch, windshield, battery and mic. holder.

#### Specifications:

Type: Omnidirectional  
Impedance: 600 OHM (low impedance)  
Frequency Response: 50Hz - 16kHz  
Tuning Range: 88 - 108MHz  
Field strength: 15mV/100m  
Plug: 6.35mm  
Battery: 1.5V UM3/AA

Cat C-1582

**\$49.95**



## ARISTA

### Boundary Microphone

Designed for maximum performance for table top recording in conferences, stage recording, etc. Utilises reflected energy from surface mounting for maximum sensitivity. It has a half-cardioid pick up pattern designed to catch the sound from the top surface only. Can also be applied to music recording or field sound pickup, etc. Comes with battery, 1.5m cable and 3.5mm plug.

#### Specifications:

Impedance: 600 ohm  
Sensitivity: -68dB  
Frequency Response: 70 - 15,000Hz  
Current Drain: <500uA  
Battery life: 1000 hours

Cat C-1550

**\$69.95**



### Omni-Directional Condenser Lapel Microphone

It's incredibly low-priced and will come in handy for most types of recordings. It comes complete with a 12 month warranty.

#### Specifications:

Frequency Response: 50 - 18000Hz  
Sensitivity: -65 +/- 3dB  
Output Impedance: 1K ohm

Cat C-1062

**\$24.95**

## digitor

### Stereo Electret

A quality Japanese stereo microphone from 'AOI'. It's uni-directional with built-in wind sock to protect against noise when used outside. Floating constructions helps eliminate vibrations & touch noise. It comes complete with table stand, 3 metre cord and 2 x 6.5mm plugs. At just 160g it's easy to handle as well.

#### Specifications:

Built-in On/Off Switch  
Frequency response: 50-2000Hz  
Sensitivity: 64dB  
S/N ratio: 40dB  
Output impedance: 1K ohm max

Cat C-1028

**\$49.95**



### A. Metal Dynamic Microphone

A superb 52 x 173mm microphone for quality recording constructed from diecast zinc. It's attached to a 4.5m cord fitted with a 1/4 inch phone plug. Complete with a 12-month warranty.

#### Specifications:

Frequency Response: 60-15,000 Hz  
Sensitivity: 76 +/- 3dB  
Output Impedance: 600 OHM  
Size: 52 x 173mm

Cat C-1508

**\$39.95**

Sensitivity: 75 +/- dB  
Size: 54.50 x 174.5mm

Cat C-1509

**\$49.95**

### C. Digitor Dynamic Microphone

Ideal for most types of recording and at an incredible price! Made from durable plastic, it's 52 x 183mm and comes with a 4.5 metre cord fitted with a 1/4" plug. Complete with a 12-month warranty.

#### Specifications:

Frequency Response: 80 - 12,000 Hz  
Sensitivity: 72 +/- 3dB  
Output Impedance: 600 OHM

Cat C-1506

**\$29.95**

### B. Metal Uni-Directional Dynamic Microphone

If you want the best sound recordings, get this quality microphone from Digitor. It's the top-of-the-line model, constructed from diecast zinc, and has both high and low sensitivity and impedance. It's 39.50 x 168mm and comes complete with a 4.5m cord, 1/4 inch phone plug and a durable case. Includes 12 months warranty.

#### Specifications:

Frequency Response: 80 - 15,000Hz  
Sensitivity: Low: 76 +/- 3 dB  
High: 60 +/- 3 dB

Output Impedance: Low: 600 OHM  
High: 20K OHM

Cat C-1510

**\$59.95**

### D. With 'anti-pop' filter Uni-Directional Mic

Ideal for most types of recording. The rugged construction makes this one particularly suitable for band and PA work as well as home recording. It comes complete with 3m lead, inbuilt On/Off switch and case.

#### Specifications:

Impedance: 600 ohms (@ 1000Hz)  
Frequency range: 180-12,000Hz  
Sensitivity: -78dB +/- 3dB

Cat C-1505

**\$19.95**



#### Specifications:

Input impedance: 600 ohm (balanced)  
Frequency response: 50 - 15,000Hz  
Sensitivity: -76dB @ 1000Hz

Cat C-1525

**\$119.95**



#### Specifications:

Input impedance: 600 ohm (balanced)  
Frequency response: 50 - 18,000Hz  
Sensitivity: -74dB @ 1000Hz

Cat C-1530

**\$129.95**

## High Quality Uni-Directional

A high quality dynamic microphone from 'AOI' in Japan. It's the ideal microphone for halls, auditoriums, broadcasting, etc where sound quality is of the essence. Comes with stand mount, 6 metre shielded cable and 6.5mm plug.

### For professional use!

### Uni-Directional Dynamic

Superb performance and quality construction make this uni-directional dynamic microphone perfect for stage, vocal, studio or broadcasting. Another impressive Japanese product from 'AOI'. It has a built-in tone control and comes complete with stand mount, 6 metre shielded cable and 6.5mm plug.

### Electret Insert

Microphone in need of repair? This unit weighs just 1.5g, fits most makes and has high sensitivity with omni-directional characteristics.

Cat C-1160

**\$4.95**

### Microphone Foam Windscreen

Thick durable replacement foam to cover the business end of your microphone.

Cat C-1265

**\$2.95**

### Microphone Cable

Lengthy microphone cable fitted on one end with a 3-pin XLR plug and a 6.3mm plug on the other.

Cat C-1275

**\$14.95**

### Microphone Holder

Simply clips on to stand. With screw for adjustment, it fits most microphones.

Cat C-1272

**\$4.95**

### Microphone Cable

Strong microphone cable that is fitted on both ends with 3-pin XLR plugs.

Cat C-1276

**\$19.95**





## 30 Watts RMS P.A. Amplifier **ARISTA**

A superb PA amp which is ideal for schools, auditoriums, the work place... anywhere a quality and reliable PA system is required. It can be used as a stand alone unit or with external tuners, cassettes, etc. and booster amplifiers. Features include two auxiliary inputs for tuners, standard cassette players, and the like, and two microphone inputs. One of the microphone inputs has priority paging which means it automatically fades out the other inputs. There are also separate base and treble controls and separate volume controls for each mic as well as high/low impedance switching for each microphone.

All in all, the Arista TPA30 represents excellent value for money. It's very well constructed and the front panel layout is designed for the maximum ease of use. It has 240 volt AC and 13.8 volts DC power inputs, so it can be used in permanent situations or as a transportable system.

### Specifications

#### Inputs -

Mic 1: Balanced 600 ohm/0.5V  
Mic 2: Unbalanced 600ohm/0.5V  
Aux.1 & 2 : 100k ohm/200mV

#### Outputs -

Speaker Outputs: 4, 8 & 16 ohms  
Line Outputs: 70V (163 ohms) &  
100V (330 ohm)  
Auxiliary 1 & 2: 600 ohm/1V (0dB)/  
RCA sockets  
Power Supply: 240V AC or 13.8V DC

Cat A-8030 **\$299**



## 4 Channel Micro Mixer

A great value mini mixer that can easily be held in the hands! There are 4 channels, each with a separate volume control, a master volume control and single 6.5mm output as well as an LED peak indicator. Operation is via a 9V (regulated) AC adaptor or a 9V battery (not supplied). The input impedance is 22K ohm and output 10K ohm. With input sensitivity 190mV (RMS) and output level 2.1V (RMS). All in all, it's a great little performer.

Cat A-8400

**\$49<sup>95</sup>**

## Microphone Stands

Quality tripod microphone stands for either desk or floor. They both have non slip rubber feet and sturdy steel construction for added stability. Both have standard 5/8" male adaptor threads for microphone.

### Desk Stand

Cat C-1600

**\$9<sup>95</sup>**

### Floor Stand

Fully adjustable up to 1.57 metres.

Cat C-1605

**\$69<sup>95</sup>**



## SPEAKERS



## High Quality Bookshelf Speakers

A superb set of two-way hi-fi bookshelf speakers that are ideal for PA, surround sound systems in the home, professional studios or even the car or boat. They have a built-in 70/100V line transformer and will handle 35 watts (RMS). Features include selectable impedances and a 100mm woofer and 19mm tweeter. With a frequency response of 90Hz to 18,000Hz they measure just 190 x 125 x 125mm. Supplied with wall brackets and cable.

Cat A-8200

**\$159<sup>95</sup>**



## Bargain Extension Speakers

Complete with built-in 100 volt line transformer. They're ideal for wall mounting in assembly halls, etc. The volume control is conveniently mounted on the bottom of the speaker for easy access. Comprises an 8" twin cone speaker with 10 watt (RMS) handling capacity. Selectable impedances are 500, 1k, 2k, 4k & 8k ohms with 100 volt tapings of 10, 5, 2.5 & 1.25 watts.

Cat A-8210

**\$79<sup>95</sup> ea**



## Professional sound for your videos!

## Stereo Sound Mixer

A great value stereo mixer that's also ideal for giving home videos a professional stereo soundtrack! You can add your favourite background music and narration without effecting the original soundtrack. The volume level of each input can be individually controlled or even eliminated. The video sound mixer features separate volume controls for audio, mic, music and master and is suitable for both mono and stereo mixing. There's also an earphone socket and it can be powered via the AC adaptor jack (9V) or with a 9V battery (not supplied). Comes complete with cables.

Cat A-8401

**\$99<sup>95</sup>**



## Megaphone

Now hear this! Incorporating a high-quality dynamic microphone and amplifier, this megaphone is just the thing for sporting events, protests - anytime you need to move around. Weighs just 1.5kg and runs for up to 12 hours on one set of batteries. Requires 6 x C-size batteries.

Cat A-2010

**\$149<sup>95</sup>**



## Ceiling Mount Speaker

A 200mm (8") dual cone speaker with inbuilt 70/100 volt line transformer that's designed for ceiling, or cavity wall mounting. It's a 6 watt (RMS) full range speaker with 1k/2k/8k/16k ohm impedance. The frequency response is 75Hz to 18,000Hz.

Cat A-8215

**\$34<sup>95</sup>**

### Speaker Grille

White plastic grille to suit any 8" (200mm) speaker.

Cat C-2646

**\$4.95**



# Tapes & Accessories

## VIDEO TAPES



**maxell**®  
VHS & Beta!

### Maxell Video Tapes

You won't be disappointed with the quality or performance from these famous-name tapes.

E180GL 3hr.	C-3406	\$5.95
E180G VHS 3hr.	C-3401	\$6.95
E240G VHS 4hr.	C-3435	\$9.95
E180 HGX VHS - High Grade	C-3400	\$10.95

### Bargain Video Tapes

Outstanding value and performance at this low price. Quality 180 minute VHS video tapes.

Cat C-3488	\$3.95
Cat C-3490	\$4.95
5 pack Cat C-3489	\$19.75



### CD Lens Cleaner

To get the best sound from your CD player, it's vital that you keep your CD player's lens free from dirt and dust. This cleaner comes complete with liquid that removes grime from your lens. It's easy to apply and is harmless to your CDs and player.  
Cat C-7115

\$4.95



### CD & Laser Disc Cleaners

A handy pack of specially moistened tissues for cleaning CDs and Laser Discs. Contains 80 tissues.  
Cat C-7040

\$4.95



### Video Library Case

Protect your favourite videos! This handy video library case is made from thick, protective polypropylene and it offers a full clear cover for title display. Holds up to 5 video tapes and comes complete with a 3-month warranty.  
Cat C-3020

\$7.95

**SONY**

### Sony Video Tapes

E180V VHS 3hr.	C-3210	\$9.95
L750DX Beta. 3hr.	C-3220	\$11.95



### Fuji Video Tape

E180 VHS	\$7.95
Cat C-3600	

### Removable Video Labels

A Great idea! Comes with six self-adhesive pockets and 21 blank labels. Simply slip in a new label when you change the recording.

Cat C-3480 \$3.95

### Answering Machine Tapes

#### Outgoing Messages

Spool-less tapes for answering Machines.

15 Secs.	Cat C-3310	\$11.95 ea
20 Secs.	Cat C-3309	
30 Secs.	Cat C-3311	
60 Secs.	Cat C-3312	

#### Incoming Message Tape

Standard size 60 min. cassette.  
Cat C-3313

\$9.95

### 8mm & C Tapes

Sony 8mm 90min Video Tapes	C-3280	\$15.95
Maxell 8mm 90min Video Tapes	C-3408	\$14.95
Maxell 'C' 45min Video Tapes (2pkt)	C-3418	\$24.95
Maxell 'C' 30min Video Tapes	C-3419	\$9.95
Digitor 8mm Video Tapes (60min)	C-3495	\$7.95

### Fuji Video Tapes

C Format 45min Compact VHS	C-3605	\$11.95
8mm Tape (90min)	C-3610	\$12.50

### Premium Audio Tapes

Maxell are world leaders in tape manufacture and offer a full range of tapes suitable for all recording situations. Choose between their budget tapes or their highest quality audio tapes.

#### Single Tapes:

C60UR	C-3060	\$2.95
C90UR	C-3062	\$3.95
C90UDII	C-3068	\$4.95
C90XLII	C-3072	\$7.95
MX100 Metal	C-3071	\$9.95

maxell

### Sony Audio Tapes

#### Single Tapes:

HC60C	C-3100	\$2.95
HF90C	C-3110	\$3.95
HFS100WM	C-3132	\$4.95
UX100W	C-3135	\$5.95



### Fuji Audio Tapes

DR-I C-60	C-3150	\$2.50
DR-I C-90	C-3155	\$2.95
DR-II C-90	C-3158	\$4.95
FR-IX C-100	C-3160	\$5.95
FR Metal C-100	C-3165	\$8.50

digitor



### Digitor Audio Tapes

C-90 Chrome	C-3351	\$3.95
C100 XT38	C-3352	\$2.95
C-60 EDR	C-3353	\$1.95
C-90 EDR	C-3354	\$2.50



### Cassette Head Cleaner Kit

Keeps your cassette player sounding the way it did when it was new. Cleans the heads and the capstan in one simple operation. Comes complete with fluid.  
Cat C-7098

\$4.95



### VHS Head Cleaning Kit

Clean heads mean a better picture and longer life for both your tapes and VCR. Just pop the cleaning tape in your machine and in minutes the job's done. Comes with cleaning fluid.  
Cat C-7100

\$19.95



### CD Cleaner

Keep your valuable CDs free from dirt, finger prints. Will not harm the CD surface. Dirt, fingerprints, etc can cause distortion or your CD to jump. Comes complete with cleaning fluid.  
Cat C-7110

\$19.95



### Mechanical Cassette Head Cleaner

The best and most effective way to clean cassette heads. Simply moisten the brushes and slip it in. The mechanism produces a brushing motion to get heads clean.  
Cat C-7250

\$14.95



### Chamois tape! VHS Head Cleaner Kit

The safest VHS head cleaner you can get. It uses a non-abrasive chamois tape. Simply moisten the tape with the fluid supplied and pop it into your video.  
Cat C-7101

\$29.95



### Cassette Head Demagnetizer

In seconds it reduces magnetic build-up which occurs after prolonged use of the cassette. With special power saving circuit built into a standard cassette case. Just slip it into your recorder.  
Cat C-7505

\$14.95



# TV, Audio/Video Cables



## With remote control! 20cm Portable Colour TV ROVER

Comes with all the features of the big models! Has full on-screen display, programmable channel selection, sleep timer, easy fine-tune control, telescopic antenna and more. It can be operated from the mains (240V) and also has a DC jack (13.8 - 24V) so you can power it in the van or boat. Complete with full-function remote control and car cigarette lighter adaptor. Cat G-6590

**\$499**



## Outstanding value! 12.5cm Colour Portable digitor

This is a bargain price for a great colour portable from Digitor! With a 12.5cm (5") screen, in-built fold-out stand and carry handle, automatic fine-tune, earphone jack and audio/video jacks (so you can connect it to your video). It comes with 240V AC adaptor and car cigarette lighter adaptor. A fantastic buy as a second TV for the bedroom, car, boat, van, weekender, etc. Cat G-7200

**\$399**



## With remote control! 34cm Teletext Colour TV TELEFUNKEN

A superb 34cm remote-control colour TV with Teletext. This is the first of the smaller TVs to incorporate Teletext we've ever seen, and it offers exceptional value for money. It's a quality product from Telefunken and features a full-function remote control, full on-screen display and sleep timer. The picture quality is outstanding and it has sockets for VCR, etc, etc. So now you can have all the advantages of Teletext without paying the earth. Cat G-5105

**\$499**

Also AC/DC without teletext.

Cat G-5106 **\$549**



## 34cm Colour TV

A superb remote-controlled television from Sanyo! This 34cm TV is perfect for the home because it's easy to move from room to room. On-screen displays include channel position, normalisation, sound/tuning/colour/brightness levels and video mode. Controls are kept to a minimum for simplicity and the set has video/audio input terminals and earphone jack.

**SANYO** Cat G-5101 **\$479**

**Sanyo 34cm Push-button TV** Cat G-5100 **\$349**

## Audio & Video Adaptor Cables

A small sample of our huge range of quality Audio and Video connecting cables, already fitted with plugs. Cables are 2 metres long unless stated otherwise.



### Audio

Headphone Ext cable. 3.5mm plug - 3.5mm Skt. With 6.5 x 3.5mm adaptor. 5m long  
Coiled Lead. With 6.5mm r/angle stereo plug 4m  
Coiled Lead. 6.5mm Stereo Socket 4m  
5 pin DIN plug - 5 pin DIN plug  
5 pin DIN plug - 4 x RCA plugs  
5 pin DIN plug - 2 x RCA plugs  
5 pin DIN plug - 2 x 3.5mm plugs  
1 x RCA plug - 1 x RCA plug  
1 x RCA plug - 1 x RCA socket  
1 x RCA plug - 1 x 3.5mm plug  
2 x RCA plugs - 2 x RCA plugs  
2 x RCA plugs - 2 x RCA plugs. 34cm  
4 x RCA plugs - 4 x RCA plugs  
Y Adapt. 3.5mm Stereo - 2 x RCA plugs  
Y adapt. 2 x RCA plugs - 1 x RCA  
Y Adapt. 3.5mm - 2 x RCA plugs  
1 x 3.5mm plug - 1 x 3.5mm plug. Mono  
1 x 3.5mm plug - 1 x 3.5mm socket. Stereo  
1 x 3.5mm plug - 1 x 3.5mm socket. Mono  
5 Pin DIN plug - Reversed 5 Pin DIN plug  
5 Pin DIN plug - 5 Pin DIN Socket  
1 x RCA plug - 1 RCA plug (4 piece set each 1m)  
RCA Plug - RCA Plug 5metre  
RCA Plug - RCA Socket (5 metre)  
RCA Plug - RCA Plug (10 metre)  
3.5mm Plug - Stripped end  
3.5mm Plug - crimp lugs (5m)  
**Plus Many Others Available!**

### Video

1 x RCA plug - 75 Ohm Belling Lee (RG59 Coax)  
1 x RCA plug - BNC. 1.5 metres  
1 x BNC - 1 x BNC Video cable

C-1165 **\$14.95**  
C-1109 **\$12.95**  
C-1119 **\$9.95**  
C-1011 **\$7.95**  
C-1040 **\$9.95**  
C-1021 **\$7.95**  
C-1051 **\$7.95**  
C-1070 **\$5.95**  
C-1280 **\$5.95**  
C-1080 **\$5.95**  
C-1180 **\$7.95**  
C-1185 **\$5.95**  
C-1061 **\$9.95**  
C-1240 **\$6.95**  
C-1190 **\$6.95**  
C-1250 **\$6.95**  
C-1090 **\$5.95**  
C-1159 **\$7.95**  
C-1150 **\$5.95**  
C-1045 **\$7.95**  
C-1046 **\$7.95**  
C-1069 **\$9.95**  
C-1071 **\$5.95**  
C-1072 **\$5.95**  
C-1074 **\$9.95**  
C-1081 **\$3.95**  
C-1083 **\$4.95**

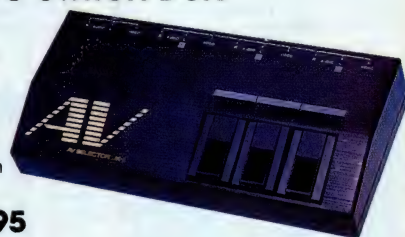
C-1286 **\$9.95**  
C-1290 **\$9.95**  
C-1285 **\$12.95**

## Need More Input Jacks?

## Stereo Audio/Video Switch Box

You know what it's like, you take your new CD player or video home, you can't wait to try it out and there are no more input jacks on your amplifier. This impressive switch box solves the problem. It's ideal for CD and video and ends cable swapping for good! You can also use it for connecting more than one video recorder through your AV system. It provides three inputs and one output. Cat C-2500

**\$39<sup>95</sup>**

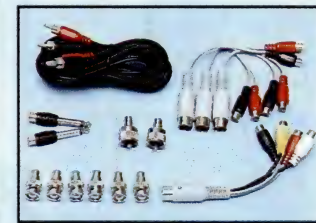


## READY-MADE AUDIO & VIDEO CABLES High Quality Inter-Connecting Cables

You can spend a small fortune on Hi-Fi and video equipment only to limit its potential sound and visual quality by using inferior connectors. With the 'Phoenix Gold' range of inter-connecting cables you'll get that unrealised performance from your equipment.

Description  
Audio (RCA-RCA)  
Audio (RCA-RCA)  
Audio (RCA-RCA with Earth)  
Audio (CD) (RCA-RCA Braided)  
Video (RCA-RCA)  
Video (BNC-BNC)  
A/V (RCA-RCA) OFC  
Audio Y adaptor RCA 2xM/1Fem

Length  
1m  
2m  
1m  
1.8m  
1m  
1m  
2m  
Cat No  
C-1305  
C-1309  
C-1312  
C-1314  
C-1316  
C-1318  
C-1320  
C-1322  
Price  
**\$15.95**  
**\$19.95**  
**\$29.95**  
**\$39.95**  
**\$19.95**  
**\$19.95**  
**\$39.95**  
**\$9.95**



## Universal Video Cable Set

It doesn't matter what type or brand of video you have, the leads, connectors and adaptors are here to suit it. Comes with 2m audio/video cable fitted with phono plugs on each end plus adaptors to suit BNC, UHF (PL-259), DIN, RCA, etc. Cat C-1287

**\$29<sup>95</sup>**



## Skart Video Connector

The new international standard for video connection. Suitable for most late-model videos and TVs.

Description  
Skart to Skart  
Skart to 2BNC/4RCA  
Skart to 6RCA  
Cat No.  
C-1210  
C-1220  
C-1230  
Price  
**\$29.95**  
**\$29.95**  
**\$29.95**



## Coax Extension Cables

Need to move the TV/video a little farther away, or perhaps you need a cable to connect from your antenna wall plug to the TV or video? These coax cables come fitted with connectors on both ends.

Male/Male 2m Cat C-1400 **\$5.95**  
Male/Female 2m Cat C-1405 **\$5.95**  
Male/Male 1.5m Cat C-1410 **\$4.95**  
Male/Female 1.5m Cat C-1415 **\$4.95**



# Personal Television



## With remote control! 3.9" LCD Colour Car TV

It's hard to believe they could fit so much into such a tiny package. This outstanding mini LCD TV has most of the features you expect to find on a regular TV. It's superbly built and the performance is nothing less than astounding. Features include on screen display, station memory, corded remote control, automatic tuning, pushbutton channel selection, UHF/VHF reception, inbuilt telescopic antenna, AV 'in' jack for connection to your VCR or video camera, external antenna jack, earphone jack and external DC power jack. It even operates from 6 'AA' batteries and comes with handy desk stand.

### Accessories

**Flexible Stand.** For car mounting.  
**Heatshield Cover.**  
**External Car Antenna.**  
**Car DC Adaptor.**

Cat G-5546  
Cat G-5547  
Cat G-5548  
Cat M-9684

Cat G-5545

**\$39.95**  
**\$9.95**  
**\$99.95**  
**\$21.95**

CITIZEN



## Handheld Colour TV

This handy pocket-sized colour TV is ideal for when you're travelling. The reception is superb and it offers an automatic tuning system, power and band select switch, brightness and volume controls, auto-tuning, indicator bar, colour control and rod antenna. With external antenna jack, DC in and earphone jacks.

Cat G-5526

**\$199**

CITIZEN

**NEW '93**

### Mini TV Antenna

Suitable for VHF/UHF/FM stations. A portable battery-operated mini amplified antenna. It's covered by a 12-month warranty. Requires 2 x 'AA' batteries.

Cat G-5550

**\$99.95**

### Universal Remote Controllers

Save yourself the 'which controller?' hassle and program all your remote controllers for TV, video, stereo, etc onto one, easy to manage universal remote. Two great models to choose from.

#### Mini Remote.

With 85 functions. Cat G-1100

**\$49.95**

#### 192 Function Remote.

Cat G-1200

**\$59.95**

**NB:** Original remote controllers are necessary in order to program any Universal Remote Control. They cannot replace a broken or lost controller.



CITIZEN

Cat G-5535

**\$349**

## Handheld Colour TV Radio

A truly remarkable product! The Citizen handheld 2.9" colour TV with AM/FM radio. Features include pushbutton automatic station tuning (TV), UHF/VHF reception, colour & brightness controls, sockets for... earphones, AV 'in' and DC power. The AM/FM radio has easy to use dial tuning & volume controls and the TV screen folds down for compact and easy transportation. Requires 5 x AA batteries.



LCD  
'Pocket'  
Colour TV

CITIZEN

Cat G-5540

**\$329**

This beautiful handheld TV has many of the features you to find on a big TV.... with 30 station memories, direct automatic tuning, AV 'in' jack for connection to your VCR or video camera, UHF/VHF tuning, telescopic antenna, earphone jack and DC power jack. It comes with a soft case and detachable desk stand. Requires 5 x AA batteries.

## Mini 4.5" Black & White TV

A bargain price for a superb portable TV from Digitor. It's great for cars, boats, caravans, guest rooms... anywhere. Features include a recessed carry handle, earphone jack, mains power adaptor jack, telescopic antenna and it can be powered by an AC adaptor (supplied) or a car battery (adaptor supplied).

digitor

Cat G-7000

**Bargain price! \$99.95**

## B&W TV With Radio

The 5 1/2" screen gives a great picture and you get an AM/FM radio as well. It can be operated from the mains or car battery via the DC power socket (requires adaptor) or with batteries (Requires 6 'C' size batteries). Has sockets for earphone & external antenna as well as an inbuilt telescopic antenna and carry handle.

ROVER

Cat G-6550

**\$149.95**

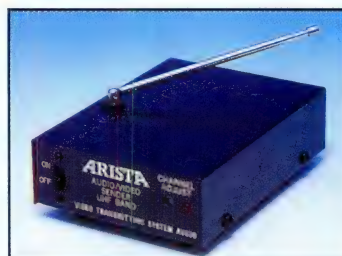
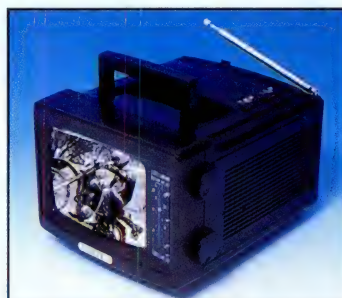
## 3-way power Personal 4.5" Black & White TV

A superb 3-way power B&W TV that you can take anywhere... in the car, boat, van, even on a picnic or camping. With advanced electronic tuning, a 'quick start' picture tube and earphone jack. It comes with an AC adaptor, car battery adaptor and uses rechargeable NiCad batteries or standard 'C' cells (Requires 10 x 'C' batteries).

digitor

Cat G-7100

**\$124.95**



## Audio Video Transmitter

A wireless video transmitter approved by the Department of Communications for UHF channel 30 with a transmitting distance of approximately 10 metres. It comes with connecting cables and AC adaptor. Complete with a 12-month warranty.

**NEW '93**

Cat G-5560

**\$89.95**





## Now, you can be on the stage!

### Portable Dual Deck Karaoke

A fantastic portable Karaoke with dual cassette decks - you can tape yourself while you sing along to your favourite music cassette! It's just like a portable recording studio and can double as a PA system.



Plus, it has an inbuilt AM/FM radio, dubbing facilities, continuous play and two microphone inputs. You can even connect it to your VCR or stereo system to get a really big sound! Comes complete with a quality microphone. Requires 6 x 'C' size batteries or 240V AC. Cat A-7400

# \$179



## Select From Our Amazing Range Of Karaoke Audio & Video Tapes!



### Audio Bank

A sturdy stackable cabinet which can hold up to 24 CDs or 18 tapes. Cat C-3000

# \$29<sup>95</sup>



### CD Portabox

A convenient storage unit that holds up to 8 CDs providing you with easy access to your collection. The Portabox has a sleek design and will both save space and protect your CDs. An ideal companion for your portable CD player. Cat C-2020

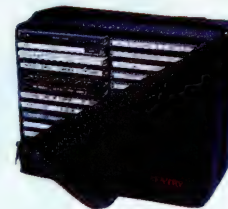
# \$29<sup>95</sup>



### Audio Tape Carry Case

A lightweight carry-case ideal for transporting your tapes when you're travelling. It features a durable padded nylon outer cover, moulded plastic insert to keep your cassettes secure and a removable divider. Holds up to 60 tapes. Cat C-3017

# \$29<sup>95</sup>



### Nylon CD Carry Case

To keep your CDs safe while you're on the move, you need this heavy-duty, weather-resistant nylon case. Holds up to 30 CDs. Cat C-3011

# \$24<sup>95</sup>



### 30-Tape Carry Case

It holds up to 30 cassettes! This nylon carry-case comes complete with a plastic moulded insert to protect your cassettes and a carry handle and shoulder strap for ease of use. The cases are available in assorted colours and come with a 3 month warranty. Cat C-3015

# \$19<sup>95</sup>

### CD Bank Storage Unit

With one-touch fold-down doors for ease of access! Holds up to 28 single or 14 double CDs. Cat C-3002

# \$29<sup>95</sup>

### CD Flipper Storage Unit

Store up to 30 CDs. Cat C-3005

# \$14<sup>95</sup>



### Audio Tape Carry Case

A handy nylon carry-case designed to hold up to 15 audio cassettes. With moulded plastic insert and carry handle. Cat C-3012

# \$9<sup>95</sup>



### CD Player & Disc Carry Case

It's large enough to carry your portable CD player, CDs and accessories! With adjustable shoulder strap and thick padding, it's both the safest and easiest way to transport your priceless collection. It also has extra separate pockets for accessories, and a special player pocket that provides you with access to your CD player's controls. Cat C-3008

# \$14<sup>95</sup>



### CD Carry Case

Protect your CDs with this handy carry-case that holds up to 15 CDs. The plastic case comes in an assortment of colours and features an easy-carry handle. It's covered by a three month warranty. Cat C-3010

# \$14<sup>95</sup>



### Car CD And Accessory Case

This carry-case can both protect your CDs and prevent your stereo from being stolen. Simply remove your stereo from your car when vacating it and carry it around in this thick protective case with handy adjustable strap. Cat C-3030

# \$14<sup>95</sup>



### CD Case Inserts

Replace broken jewel box inserts and ensure that your valuable CDs are not damaged. Packs of 5. Cat C-2011

# \$2<sup>95</sup>

### CD & Cassette Cases

Quality clear plastic CD and cassette cases. Cassette Cases. Pack of 10 Cat C-2000 **\$4.95** CD Cases. Pack of 5 Cat C-2010 **\$6.95**



# Telephones



## Decorator Pushbutton Phone SHIMASU

This phone is a delight to use and looks great in either the home or office. Suitable for all exchanges.

- Pushbutton Dialling
- Superb design and sound quality
- Flash key for use on some PABX
- Ringer volume control
- One-touch redial
- Ringer light
- Tone & Pulse switchable

White Cat F-4520 **\$34<sup>95</sup>**



## Easy Dialling! Big Button Phone

Many people find standard phones difficult to operate. That's why we stock this Big Button Phone that has large, raised keys for easier dialling. It's ideal for the visually impaired or for those with arthritis. It's tone/pulse switchable and it has excellent sound quality. Plus it has adjustable ringer volume, one-touch redial and it's wall or desk mountable. Simply plugs into any standard phone socket.

Cat F-5950 **\$59<sup>95</sup>**



## Wall/Desk mount Fashion Phones

Designed to complement any decor! A high quality, easy to operate pushbutton phone which can be wall or desk mounted.

- Quality design and construction
- Flash key for use on some PABX
- Tone/Pulse switchable
- Ringer volume control
- Ringer light
- One touch redial
- Excellent sound

**SHIMASU**

White Cat F-4511  
Grey Cat F-4512

**\$39<sup>95</sup>** ea



## SHIMASU One-Piece 10 Memory Phones

Superb quality and unbeatable value. One-piece phones with the added convenience of 10 memories for those important numbers. They suit all phone exchanges and have ringer on/off, last number redial and mute switch. They come with a matching cradle for wall mounting and plug into any standard phone socket.

Ivory Cat F-4301  
Black Cat F-4302

**\$39<sup>95</sup>** ea



## Telecom Slimline Phone

A unique gondola-style phone suitable for desk or wall mounting. It's Easycall compatible, has 10 number memory for storing those frequently called numbers, backlit keypad for easy dialling day or night. Comes complete with a 12 month warranty.



Telecom Australia

Cat F-4325 Ivory  
Cat F-4326 Pink

**\$59<sup>95</sup>**



## A Work Of Art!

## Roxanne Neon Phone

A fantastic phone with plenty of glitz and glamour for those places where conventional phones are all too subdued. With pushbutton dialling, ringer on/off, and tone/pulse selection.

The light flashes when the phone rings, but can be switched to high, low, or no flash. Comes with mains adapter and 12 months warranty

Cat F-3410 Pink  
Cat F-3411 Blue

**\$149<sup>95</sup>** ea



## 3-in-one! Bargain Clock Radio Phone

Cat F-3000

**\$39<sup>95</sup>**

A bargain-priced clock radio phone you can put by the bed. It'll save you stumbling around in the dark trying to get to the phone in the middle of the night! Its features include: AM/FM radio, a full-function pushbutton phone, snooze control and a choice of waking to radio or alarm.



## It's Got Style! Clock Radio Phone

Cat F-3060

**\$89<sup>95</sup>**

A quality clock radio phone that is not only well built, it looks fantastic as well. The pushbutton phone has excellent sound quality, ringer on/off, tone/pulse switch, and last number redial. Plus, you get an AM/FM radio and a full featured alarm clock with wake to music/alarm, large LED display, snooze control and battery back-up.



## Phone/Clock Radio

AUDIOLINE

Cat F-3250

**\$89<sup>95</sup>**

The perfect combination for a bedroom - it saves space and looks great! The phone's features include: Last number redial, Easycall compatibility and recall functions. The radio offers: Automatic radio mute for incoming and outgoing calls, snooze button, alarm option and sleep function. It comes complete with a 12 month warranty.



## 10 Memory Phone



An exceptionally well-built 10 memory push-button phone from Shimasu. Wall or desk mountable.

- 10 memories
- Pushbutton dialling
- Ring indicator
- One touch redial
- Tone/Pulse dialling

**\$59<sup>95</sup>**

**SHIMASU**

## 20 Memory Phone

With 20 memories, this phone makes those elusive numbers as easy to remember as pushing a button. It's tone/pulse switchable so you can use it no matter what exchange you're connected to, and it also has a flash key suitable for some PABX systems so it's great at the office as well. Plus, there's an adjustable ringer (Hi/Low/Off), last number redial and a handy fold down stand so you can find the most comfortable angle when it's on the desk. It's also wall or desk mountable.

Cat F-6120

**Value Plus!**  
**\$79<sup>95</sup>**



## Telecom Touch Phone



The Telecom touch phone is the ideal long-lasting family phone, designed and manufactured in Australia to the highest standards. Among its features are 10 memories, tone and pulse dialling, flash key suitable for some PABX systems, hearing compatibility and more! It comes in three stylish colours.

- Ivory Cat F-4570
- Beige Cat F-4572
- Grey Cat F-4574

**Lasting Value!**

**\$89<sup>95</sup>**



Telecom Australia

## 10 Memory Speakerphone

Once you've experienced the versatility and convenience of a speakerphone, you won't want anything less. It's not only good in the office, it's also incredibly handy in the kitchen with its easy to use over-sized keypad. This great value phone has 10 memories and is tone/pulse switchable for compatibility with all exchanges. It also has a flash key suitable for some PABX systems and can be wall or desk mounted.

Cat F-6216

**\$119**



## Access 30 Speakerphone



Ideal for the home or office, the quality Telecom Access 30 is a fully handsfree speakerphone designed and manufactured in Australia. It features one-touch dialling for up to 20 numbers, Easycall compatibility and last number redial. Plus, it includes a 'hold' function, it's wall mountable and comes complete with a 12 month warranty.

Cat F-6535

**\$149<sup>95</sup>**



Telecom Australia

## 2-line Phone

It acts like a mini switchboard when you've got two lines coming in. You can put people on hold (for privacy or while switching lines) and it has in-use and incoming call indicators. It's an inexpensive alternative to those expensive multi-line phone systems and is suitable for offices or for home. It has earth recall or timed break to suit PABX systems. Plus, it's Tone/pulse switchable, and it has selectable ringer volume and pitch (with a different setting for each line so you can distinguish which line is ringing).



**\$149<sup>95</sup>**



## Access 40 Speaker Phone



A superbly-designed top-of-the-line Telecom fully handsfree speakerphone with 128 memories, hold and mute facilities and redial button. It also offers you a timer so that you can keep track of your conversation and a hold function. Additionally, it's Easycall compatible and is covered by a 12 month warranty. Comes in an attractive shade of grey.

Cat F-6538

**\$249**



Telecom Australia

## It's like a mini exchange! Telecom Executive 2-line Phone

Ideal for small business, professional suites, businesses run from the home or as the family phone. This phone has everything you need including last number redial, flash key suitable for some PABX systems, Easycall compatibility and 16 one-touch memories. Plus, it offers you the luxury of having hands-free operation, an LCD read-out and Pin Lock Security to stop outgoing calls. Battery back-up ensures your phone's memory is not erased and abbreviated dialling allows you to access an additional 99 numbers - just by dialling 2-digits. The phone is hearing aid compatible, can be wall or desk mounted and is covered by a 12 month warranty.

Cat F-6540



Telecom Australia

**\$299**



# Cordless Phones



## Bargain Cordless Phone

A sensational cordless phone that's exclusive to Dick Smith Electronics. A quality phone that's great when you're out in the garden or around the house, with push-button two-way paging and one-touch last-number redial plus pulse or tone dialling.

Cat F-7005

**\$149<sup>95</sup>**



## Cordless Phone

One of our most popular cordless phones, this super dependable phone has pushbutton dialling, one-touch last-number redial, pause and automatic on/off. Plus, it is tone/pulse switchable and offers paging facilities.

Cat F-7002

**\$159<sup>95</sup>**



## 10 Memories & 2-Way Paging Shimasu Cordless Phone

Has 10 memories, last number redial, tone/pulse switchable, automatic on/off, security code to prevent unauthorised use, automatic charging when the handset is on the base unit, and even a two-way page that allows you to "beep" the handset from the base and vice-versa. This unit has been designed to suit Australian conditions and can be wall or desk mounted.

Cat F-7102

**SHIMASU \$189<sup>95</sup>**



## Shimasu 10 Memories & Full Intercom

A top-of-the-range cordless phone that offers a huge number of features at a low price! It has an intercom feature that allows the handset to talk to the base unit. Plus, the phone features 10 memories, tone/pulse switch, automatic on/off, last number redial and a security code that prevents unauthorised use. The handset is automatically recharged when it's placed on the base station. Wall or desk mountable.

Cat F-7220

**\$199<sup>95</sup>**



## With 10 memories! Voca Compact Cordless

Simply lift the handset from the base and it automatically switches on. With 2-way paging, 10 memories, pause, one-touch redial, tone/pulse dialling (so it's suitable for all exchanges) and security code. It can be wall or desk mounted and the handset will sit upright on any flat surface for added convenience.

Cat F-7225

**\$229**

**Voca**



## Panasonic Cordless Phone

This remarkable cordless phone from Panasonic is EasyCall compatible and includes a 2-way paging system. Plus, it offers one-touch redial, pause control and automatic switch to standby. This super-compact model is wall mountable and comes complete with a replaceable/rechargeable battery and a one-year warranty.

Cat F-7239

**\$269**

**Panasonic**



## Panasonic Cordless Phone

A high quality cordless from Panasonic. Quality features include a 2-way intercom, 9 memories, one touch redial, pause, and volume control. Of course, it's tone/pulse switchable so it's suitable for all exchanges. A truly superb and reliable performer that's suitable for the home or office.

Cat F-7240

**\$299**



**Panasonic**

\* Not available through Authorised Stockists



## Hands-Free SpeakerPhone

Style, elegance and function! A state-of-the-art cordless phone for the home or office. Its stunning features include: Dynamic sound focus, full intercom with 2-way paging, hands-free speaker phone, 9 one-touch memories and more!

Cat F-7345

**\$349**



**Panasonic**



## Folding Cordless Phone

An extremely high quality cordless, which folds up into not much bigger than a deck of cards, from Panasonic. Though it's incredibly small... it's big on features. With 10 memories, hands free speaker phone on the base unit, 2-way paging and intercom, tone/pulse dialling (so it's suitable for all exchanges), one-touch redial, mute and volume control. One of the best cordless phones you can get.

Cat F-7350

**\$379**



**Panasonic**

\* Not available through Authorised Stockists



# Telephones/ Answering Machines



## Remote Answering Machine

Tracking you down will no longer be a problem for your friends - here's an answering machine you can rely on. It includes the standard features of most answering machines plus, it also has remote retrieval! Its one-touch activation makes it simple to use. All this for an incredibly low price!

Cat F-8002

**\$79<sup>95</sup>**



## Shimasu Answering Machine

Takes care of your home or business calls! The compact Shimasu answering machine is inexpensive, yet it offers all the features you could possibly need. Plus, it has remote operation, allowing you to retrieve your messages from any tone-dialling telephone, flashing call counter indicating the number of messages, and remote turn on in case you forget to turn your machine on when you go out.

Cat F-7003

**SHIMASU**

**\$129<sup>95</sup>**



## With 18 memories! Phone Answering Machine

Features a pause function for PABX systems. The answering machine has quick erase, fast forward & rewind, toll saver, remote 'on', selectable message time, call screening and memo function. It uses a single cassette and all functions are accessible through any outside phone (requires remote tone dialler where tone phone is not available).

Cat F-8520

**\$149<sup>95</sup>**



## Telecom Answering Machine

This genuine Telecom answering machine and telephone features a slim design. The phone offers 10 memories, while the answering machine includes power failure protection and call screening. Plus it's Easycall compatible and can be mounted on your desk or wall.

Cat F-8333 Ivory

Cat F-8334 Charcoal

**\$159<sup>95</sup>**

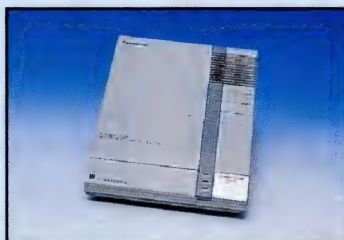


## Shimasu Telephone Answering Machine

For those who are rarely at home, this reliable machine will take care of any important calls! With its time and day stamp, you can accurately track when messages were received. It also offers a numeric call counter, memo record, 10 number memory, hearing aid compatible and call waiting compatible. Plus you can activate your answering machine and retrieve messages from any pushbutton telephone, record a two-way conversation and screen your telephone calls. Desk or wall mountable.

**SHIMASU** Cat F-7001

**\$169<sup>95</sup>**



## Panasonic Dual-Tape Answering Machine

An outstanding dual-tape telephone answering machine that allows you to make an extended greeting message of up to 2 minutes! Plus, it has an LED call counter, remote on/off, tone remote control, memory playback, security code and a monitor speaker to screen calls. Also features memo recording and a "number rings" selector (2/4/Toll-Saver).

Cat F-8336

**Panasonic**

**\$189**



## State-of-the-art Fully Digital Answering Machine

This amazing digital answering machine is in a class of its own! It has no moving parts and requires no tape, so there's no waiting for tapes to rewind. Topline features include day/time stamp, 30 message capacity, call screening, remote message retrieval/activation, memo and more! Comes with a 12 month warranty.

Cat F-8600

**AUDIOLINE**

**\$199<sup>95</sup>**



## Dual-Tape Answering Machine

A quality Telecom answering machine that's easy to use and features remote message retrieval plus digital message counter with day/time stamp. It has a dual micro-cassette: one for outgoing messages and one for incoming and functions that allow you to record a two-way conversation. You can even use it to monitor the room - tightening your security or keeping an eye on the baby.

Cat F-8332

**Telecom Australia**

**\$239**



## Phone & Answering Machine

A high quality combined phone & answering machine from Panasonic. The phone has recall to suit some PABX systems, 12 memories and on-hook dialling. The answering machine uses a single microcassette tape and has tone remote control for most functions. You can also use it to screen calls, record two-way conversations and as an electronic notepad to record messages for family etc. Can be wall or desk mounted.

Cat F-8570

**Panasonic**

**\$239**



## With Remote Activation Cordless Phone & Answering Machine

If you're after a new phone that offers superior functions, you'll find it in this Shimasu model. It has redial and mute buttons plus a full function remote answering machine. The answering machine has remote turn-on, playback and message replacement, 2-way conversation recording and toll saver. All this and more in one compact package!

Cat F-7007

**SHIMASU**

**\$269**



## Dual-Tape Answering Machine

A commercial quality dual-tape answering machine with full-function tone remote. Features include voice time/date stamp, message and call counter, call screening, two tape speeds (doubles the tape length), remote on/off, a talking clock, answer-only option, message-length selector, toll saver and memo function. Transfer a call to the machine to take a message! A multitude of functions can be accessed remotely and you can even bypass your message to save money on STD calls.

Cat F-8355

**CODE-A-PHONE**

**\$329**



## Cordless Phone & Answering Machine

This phone has every possible convenience! It's compact, cordless and has an inbuilt answering machine! The phone's outstanding features include: 10 memories, Dynamic Sound Focus, paging and a full intercom system. Plus, it's Call waiting compatible! The voice-activated answering machine boasts remote message retrieval, one-touch play back, call screening and more!

Cat F-7560

**CALL WAITING COMPATIBLE**

**Panasonic**

**\$399**



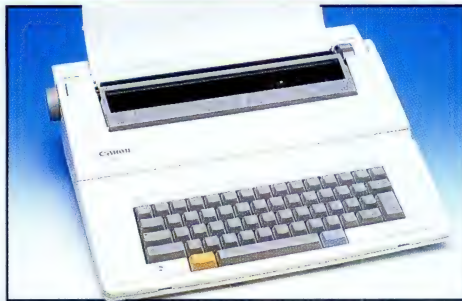
# Business Equipment



## SL470 Typewriter

The SL470 with its automatic functions such as auto return, centre, underscore and bold quickly provides your work with a neat finish. Mistakes can be erased in seconds with the SL470's full line memory correction and word erasure. Plus, the SL470 has 8 programmable tabs, special characters and symbols, and three different pitch sizes of 10, 12 and 15.

Cat F-0992 **\$189** **SMITH CORONA**



## ES3 Personal Typewriter

A lightweight portable typewriter that has all the essential features to meet your everyday needs. It includes an interchangeable daisywheel for professional quality printing (including bold print). It has a 12" platen for oversized documents, automatic paper feed for convenience and even a full line of correction memory to help correct mistakes. Plus, it offers the standard paragraph indent, decimal tabs and right margin alignment.

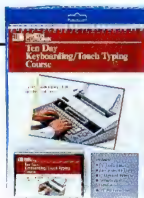
Cat F-0988 **\$199** **Canon**



## SD670 Typewriter

The SD670 boasts all the same features as standard typewriters, but with the advantage of word processing functions that enable you to search & replace, move, copy or delete blocks of text. The SD670 will save you time, allowing you to type up to 12 cps and offering bidirectional printing of the utmost quality. Plus, it features an impressive 90,000 word dictionary with auto spell checker and a two-line correction system that will neatly cover up any mistakes that may slip in!

Cat F-0995 **\$299** **SMITH CORONA**



## Typing Course

Full instructions to teach yourself how to type in just ten days. This course is ideal for the beginner who wants to develop the correct keyboarding skills, or for those who just want to touch up their previously learnt skills. Includes book and cassette.

Cat F-0983

**\$39<sup>95</sup>**

## The 'Baby' Fax

Your life will be so much easier with this compact fax, phone & copier. While its footprint is smaller than an A4 piece of paper, it's packed with features. It has fine and normal transmission modes, Group 3 fax compatibility, copier, a 20-number fax and phone autodialler. Plus, it boasts a built-in voice prompt, fax switch and the ability to share one line with your answering machine. For something so small, you're getting a huge deal!

Cat F-0918



**\$899**



**Voca**

## Phone, Fax And Answering Machine

A complete communications system in one compact package. The quality and versatility of this superb machine is nothing short of exceptional! The telephone has a 30-number memory, tone/pulse dialling. The full-function Remote Answering Machine uses a recordable chip for your outgoing messages, so it's as fast as a dual-tape machine. Additionally, all functions are accessible via any outside phone (it comes complete with tone dialler). The automatic document feeder can handle up to 10 documents at a time, it's compatible with CCITT Group 3 and provides maximum versatility over fax quality. Add to this an inbuilt fax switch, so you can use it on a single phone line, and photocopier capabilities... and you've got a complete, high quality office in a single package! Cat F-0917

**\$1099**

**Panasonic**

## Plus Video Instruction Guide

Your installation and operation video manual from Panasonic. This user-friendly guide to understanding your communications system is included at no extra cost.



## Fax Rolls

Quality facsimile machine paper. Pack of 3pcs. to suit the Voca M700 'Baby Fax'. Cat F-0939

**\$22<sup>95</sup>**

210mm (w) x 30m (l) x 15mm (centre) Cat F-0941

**\$5<sup>95</sup>**

216mm (w) x 30m (l) x 11.5mm (centre) Cat F-9601

**\$5<sup>95</sup>**

## ACCESSORIES

### Typewriter Ribbons

Panasonic R530	Compatible	F-0944	<b>\$8.95</b>
Sharp PA3000 II	Original	F-0951	<b>\$7.95</b>
Sharp PA3000 II	Compatible	F-0945	<b>\$6.95</b>
Sharp Fabric ZX3FSI	Original	F-0953	<b>\$10.50</b>
Smith Corona XL2800	Compatible	F-0946	<b>\$8.50</b>
Canon Typestar IR50(pkt.2)	Original	F-0947	<b>\$15.95</b>
Smith Corona (2 pkt)	Original	F-0982	<b>\$18.95</b>
Canon Typestar IR100(pkt.2)	Original	F-0966	<b>\$22.95</b>
Canon ES3/ES23	Original	F-0967	<b>\$10.95</b>

### Copy & Typing Paper

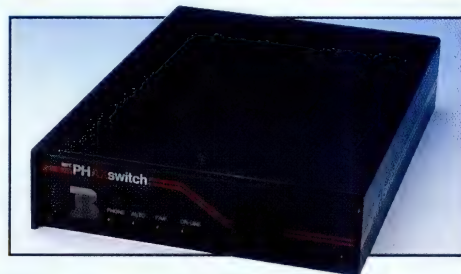
High quality 80g x A4 paper in handy 500 sheet packs.	F-0948	<b>\$7.95</b>
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### Correction Tape

Sharp PA 3000 II(pkt.2pcs)	Original	F-0952	<b>\$6.95</b>
Canon ES3/ES23	Original	F-0968	<b>\$2.10</b>
Smith Corona XL, XD, PWP, DWP-I	Original	F-0999	<b>\$8.95</b>

### Other Accessories

Canon Typestar 220	AC Adaptor	F-0965	<b>\$45.00</b>
Sharp Copier Cartridge	Black	F-0976	<b>\$149.95</b>
Typestar (AD6)	Adaptor	F-0969	<b>\$45.00</b>
12pnt script Daisywheel	ZX9032	F-0949	<b>\$27.95</b>



## Fax Switch Automatically switches between fax and phone!

Saves having two phone lines! PHAXswitch simply plugs into your phone line and automatically switches between phone and fax when a fax is detected. You can select between phone, fax or auto. Has built-in voice prompt for faxes which are sent manually and automatic fax detection. Cat F-9650

**\$299**





## 2-Station Wired Intercom

After you experience the convenience of this intercom system, you won't be able to do without it! It's a top-quality Dick Smith Electronics 2-station intercom system with a monitoring LED. It's easy to install and operates on either mains or battery power. You can hang it on the wall or simply place it on your desk. Includes master station, sub-station and cable.

Cat F-1025

**\$34<sup>95</sup>**



*Requires no wiring*

## 'Plug'-In Style Room Monitor

A smart and inexpensive way to keep an open 'ear' on the kids playroom, home patient or any room which has a powerpoint. It plugs straight into a powerpoint and it's ready... it's that simple. Voice activation helps eliminate background noise and a channel selector ensures privacy.

Cat F-1201

**SHIMASU \$39<sup>95</sup>**



## Room Monitor with Night-light

Now your child won't be left in the dark. A handy night-light on this monitor makes it especially useful in a child's bedroom. It plugs straight into any powerpoint, so it's easy to move around and doesn't require wiring. What's more it has adjustable volume and channel selection for privacy.

Cat F-1401

**SHIMASU \$49<sup>95</sup>**

## Great Range! Room Monitor With Mobile Receiver

Cat F-1310

**\$59<sup>95</sup>**

**SHIMASU**



Need room to move? Then this monitor with mobile receiver is perfect. The receiver clips onto your belt, leaving you free to roam around the house and garden... and still hear what's happening in the baby's room. The monitor is mains powered with channel switch to minimise interference and the receiver has a battery level indicator (requires 2 x AA batteries or a DC plug pack (Cat M-9625). A quality and reliable monitor from Shimasu.



## 'Phone' Style Wireless Intercom

A stylish set of intercoms for private 2-way conversations. They simply plug into any powerpoint... so there's no wiring required. As well, both are wall or desk mountable and the moment one receiver is lifted the other station is automatically called.

Cat F-1017

**\$89<sup>95</sup>**



## Expandable Wireless Intercom

**SHIMASU**

Another sensational intercom from Shimasu! This quality intercom becomes a room monitor at the touch of a button. As well, when in use as a monitor you get the convenience of voice activation.

- Talk-lock key for room monitoring
- Expandable
- Volume control
- Mains powered - no batteries or wiring required
- Wall or desk mountable

Cat F-1240

**\$89<sup>95</sup>**



## Voice-activated! Multi-Station Wireless Intercom

Cat F-1255

**\$149<sup>95</sup>**

The ultimate in home communication! A stylish and modern intercom which doubles as a room monitor. This superb system is expandable up to 3 stations and packed with features.

- Expandable up to 3 stations
- Voice activated - no talk buttons to press
- Talk-lock key for room monitoring
- Volume control
- Simply plugs into a mains outlet - no batteries or wiring
- Wall or desk mountable
- Two units supplied

**SHIMASU**

Additional units Cat F-1256 **\$79<sup>95</sup>**



# Telephone Accessories

## TELEPHONE ADAPTORS

### A. Double Adaptor.

Allows connection of two devices to one socket.

Cat F-5112 **\$7<sup>95</sup>**

### B. Mode 3 Double Adaptor

Double adaptor designed for the connection of Modem or some Fax machines to the telephone line giving priority to that device.

Cat F-5114 **\$21<sup>95</sup>**

### C. Line Socket

Accepts any standard line plug. It's ideal for extension lines or as a replacement socket.

Cat F-5118 **\$5<sup>95</sup>**

### D. Line Plug

6 Connector Line Plug. Fits standard telephone cable. Ideal as a replacement or for extension lines.

Cat F-5117 **\$5<sup>95</sup>**

### E. Mini Spade Lugs

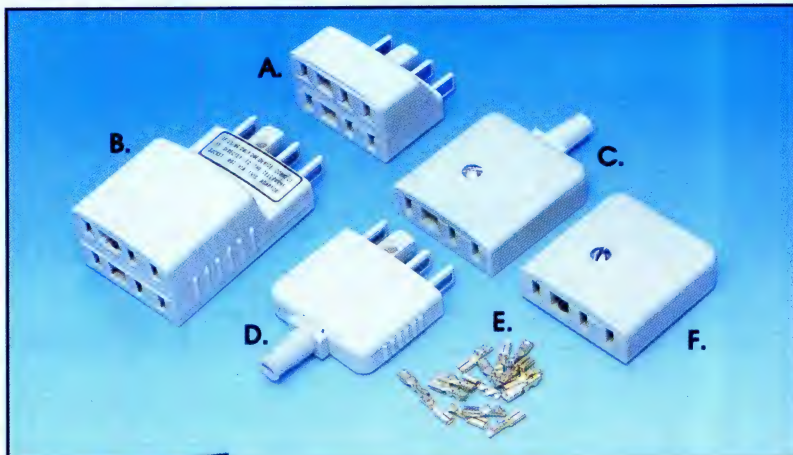
Pack of 15, 2.8mm female spade lugs for the quick internal connection of cable to telephone plugs and sockets.

Cat F-2580 **\$3<sup>95</sup>**

### F. Wallmount Socket

It fixes to the wall and accepts any standard telephone plug.

Cat F-2012 **\$5<sup>95</sup>**



## Coiled Handset Cables

Fitted with modular plugs on both ends. They suit any phone with modular connectors.



3 Metre	White	Cat F-2455	<b>\$9<sup>95</sup></b>
3 Metre	Ivory	Cat F-2457	<b>\$9<sup>95</sup></b>
3 Metre	Black	Cat F-2458	<b>\$9<sup>95</sup></b>
8 Metre	Ivory	Cat F-4980	<b>\$16<sup>95</sup></b>

## Extension Leads

A quick and easy way to move your phone around the house or room to wherever you want it. Fitted with standard phone plug and socket. Commander system extension cables are also available, ask at your local store.



3 Metre	F-2400	<b>\$10<sup>95</sup></b>	10 Metre	F-2405	<b>\$15<sup>95</sup></b>
5 Metre	F-2402	<b>\$12<sup>95</sup></b>	15 Metre	F-2408	<b>\$19<sup>95</sup></b>



## Extension Lead With Double Adaptor

Standard telephone lead fitted with a double adaptor at one end and socket at the other. It allows connection of more than one device... Eg. Telephone and Answering machine. 15 metre cable.

Cat F-5103 **\$27<sup>95</sup>**

## Modular to Standard Extension Lead

10 metre extension lead fitted with a standard double adaptor at one end and a modular plug at the other.

Cat F-2210 **\$17<sup>95</sup>**

## 2 metre Line Cord

Standard telephone lead fitted with standard plug at one end and a modular plug at the other end.

Cat F-2501 **\$7<sup>95</sup>**

## Extension Reels

Convenient telephone extension leads which roll up neatly to the desired length. The cables are fitted with a standard telephone plug and there's a socket fitted to reel.

### 10 Metre Version

**\$19<sup>95</sup>** Cat F-2305

### 15 Metre Version

**\$23<sup>95</sup>** Cat F-2307



## Extension Bell With Volume Control

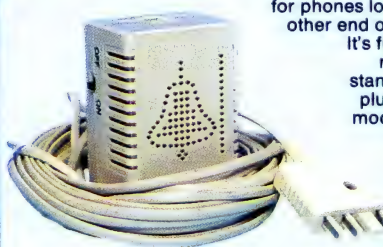
When you're out of hearing range of the phone then this extension bell is a great idea. With an extra loud twin bell ringer, volume control and additional modular socket so you can plug your phone into it. Wall or desk mountable and requires an extension lead with a modular and standard Telecom plug.

Cat F-2800

**\$24<sup>95</sup>**

## Telephone Extension Bell

This telephone extension bell allows you to 'bring the ring' closer to where you are. Ideal for phones with a soft ring or for phones located at the other end of the house. It's fitted with 10 metre cable, standard phone plug and has a modular socket on the bell itself so it can be used as an extension cable as well.



Cat F-5119 **\$19<sup>95</sup>**

## Modular Wallphone Bracket

Suitable for mounting any wall mountable phone with modular connections to virtually any wall surface. Saves having messy wires hanging down the outside of your wall.

Cat F-2450 **\$8<sup>95</sup>**



## Shoulder Rest

This ingenious device allows you to rest your phone receiver comfortably on your shoulder. It is long-lasting, easy to fit and it attaches to all phones.

Cat F-2830

**\$12<sup>95</sup>**

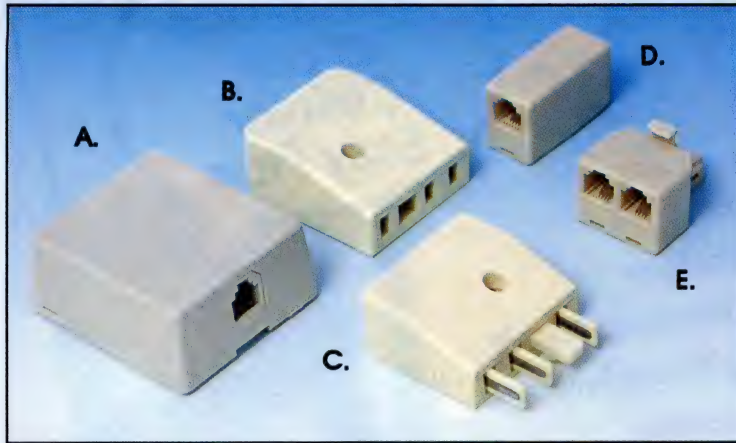


## Phone Amplifier/Hearing Aid

Ideal for people who have hearing trouble. You simply attach it to the receiver while talking on the phone. It's pocket-sized so you can carry it anywhere. The phone amplifier is also perfect when you make long distance calls or make phone calls in noisy places.

Cat F-2802 **\$39<sup>95</sup>**





## Modular Phone Accessories

### A. Wall Socket

Surface mount wall socket which accepts modular plugs.  
Cat F-2570 **\$5<sup>95</sup>**

### C. Line Plug/Adaptor

Plugs into standard Telecom socket and accepts modular plug at the other end.  
Cat F-5094 **\$7<sup>95</sup>**

### E. Double Adaptor

Turns one modular socket into two.  
Cat F-2578 **\$7<sup>95</sup>**

### B. Line Socket/Adaptor

Accepts standard Telecom plug at one end and modular plug at the other.  
Cat F-5095 **\$7<sup>95</sup>**

### D. Extension Coupler

A double line socket for joining two modular plugs.  
Cat F-2577 **\$5<sup>95</sup>**



## Modular Extension Leads

Fitted on both ends with modular plugs.

5 metre	F-5096	<b>\$12.95</b>
10 metre	F-5097	<b>\$15.95</b>
15 metre	F-5098	<b>\$19.95</b>
30 metre	F-2410	<b>\$29.95</b>

(cable only - no modular plugs)

## Piggy Back Cable

190mm cable fitted with modular plugs on each end. Designed to be used with F-2450 Wallphone Bracket.  
Cat F-2510 **\$4<sup>95</sup>**

## Universal Tone Dialler

Hear your answering machine's messages from any phone with this handy Shimasu tone dialler.



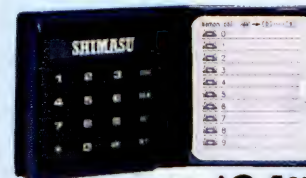
**SHIMASU**

**\$26<sup>95</sup>**

Cat F-8952

## Keyring Tone Dialler

A high quality tone dialler with 10 memories providing you with remote access to both your answering and banking facilities. It has a protective carry case and can be attached to your keyring. Comes with a 12 month warranty.



Cat F-8955

**\$24<sup>95</sup>**

## Modular Plug Packs

Modular packs in handy packs of 5. They require the Crimp Tools to be fitted to the telephone cable.

Connector	Cat No.	
4 Pin/4	F-2575	<b>\$5.95/pk</b>
6 Pin/6	F-2574	<b>\$5.95/pk</b>
6 Pin/4	F-2576	<b>\$5.95/pk</b>
8 Pin/8	F-2573	<b>\$5.95/pk</b>

## Cordless Phone Leather Carry Pouch

This attractive leather pouch will make carrying your cordless phone so much easier! Fits most cordless phone handsets.  
Cat F-7901

**\$19<sup>95</sup>**



## Cordless Phone Handset Antenna

Improve your reception with an inexpensive small handset antenna. Suits Cat F-7002, F-7102 and F-7220 models.  
Cat F-7902

**\$8<sup>95</sup>**

## Replacement Rubber Antenna

This antenna won't break like the standard telescopic units.

This will fit the F-7005: Supercall DX, F-7007: Shimasu Cordless/TAM, F-7225: Voca CT3800  
Cat F-7915

**\$27<sup>95</sup>**

## Replacement Rubber Antenna

A great addition for the popular Panasonic flip phone. This rubber antenna will save you dollars in broken antennas.  
Cat F-7922

**Panasonic**  
**\$29<sup>95</sup>**

## TELEPHONE ANSWERING MACHINE TAPES

### Musical Answering Machine Tape

A choice of 10 popular melodies. A welcome change from the usual voice recorded outgoing message.  
Cat F-8961 **\$12<sup>95</sup>**

### 20 Tam Messages Volume 2

Cat F-8963 **\$12<sup>95</sup>**

**YOU CAN  
SAVE  
\$30  
A YEAR!**

Did you know that you can return your old Telecom phone to any Telecom office and save \$30 off your telephone account every year. That's right, you'll save \$30 this year, next year... every year. So why not get the phone with the style and features you really want, and pretty soon it'll pay for itself!

## Don't know what to give?

We have that perfect gift for you!

Gift vouchers are available in \$10, \$20 & \$50 denominations, and they're redeemable at any Dick Smith Electronics store throughout Australia.

The ideal gift is easy to find... with Dick Smith Electronics Gift Vouchers.





Going Cellular  
has never been  
this easy!

**DICK SMITH  
ELECTRONICS**  
*Cellular*  
**EASY**  
CUSTOMER CARE PLAN

Take  
advantage  
of our  
Cellular  
Easy Plan

- ☒ FREE Loan Phones\*
- ☒ FREE Hotline Support Line
- ☒ FREE Delivery To Anywhere In Australia
- ☒ FREE Cellular Easy VIP Club Membership
- ☒ FREE Cellular Easy Bulletin
- ☒ Installation At A Time And Place To Suit You\*
- ☒ Instant Access To Telecom Mobilenet™
- ☒ We'll Match Any Competitor's Advertised Price
- ☒ Lease or Buy on Easy Terms\*
- ☒ A Wide Range Of Phones And Accessories
- ☒ Priced To Suit Any Budget
- ☒ Over 70 Stores And Service Centres,  
Australia-Wide

\*Special conditions apply - may not be available in some country areas.

*Need Cellular parts or accessories?*

**If we can't get it, no-one can!**

In addition to the incredibly wide range of accessories we stock, we can also source hard-to-get accessories and parts for any phone - old or new!  
No matter what you need for your cellular phone, see us first!

**We can supply you with competitively - priced**

- ☒ Hands-Free Kits
- ☒ Cellular Antennas
- ☒ Batteries and Chargers
- ☒ Leather Carry Pouches
- ☒ Microphones
- ☒ Simple Car Power Adaptors
- ☒ Brackets and cables
- ☒ Connectors and much, much more!



**OKI**

**NOKIA**  
MOBILE PHONES

**uniden**

**NEC**

**AUDIOFOX**

**MITSUBISHI  
ELECTRIC**

**Voxson**

**PHILIPS**



# Spelling Checkers - Calculators



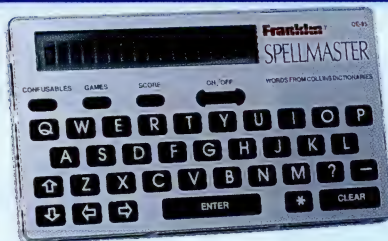
## digitor 6-Language Translator

NEW '93

Translation of English, French, German, Italian, Spanish and Polish. It acknowledges 6,850 words of each language and has 5 categories of phrases: Restaurant, social, hotel, emergency and shopping. Additionally, it has time & date, 10-digit calculator, 3 currency conversion rates and a memo function.

\$69<sup>95</sup>

Cat V-7320

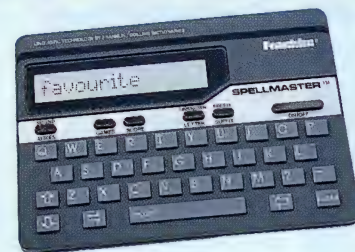


## Queen's English Collins Pocket Spellmaster

Now everyone can score top marks in spelling. Spellmaster has over 76,000 words from the Collins English Dictionary plus a 'confusables' word list which identifies more than 1,700 commonly confused words. Includes challenging word games, a Qwerty keyboard, and a clear dot matrix screen.

\$69<sup>95</sup>

Cat V-7310

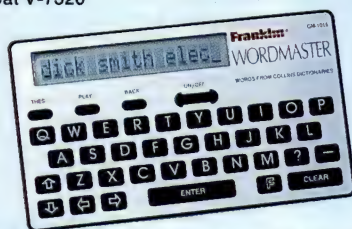


## Collins Spellmaster

Spellmaster knows the correct spelling of over 76,000 words and up to 1,700 easily confused words. It uses Collins English (not U.S.) Dictionary as its reference. Includes word games, an easy to read dot matrix screen and Qwerty keyboard. Requires 4 x AAA batteries.

Cat V-7311

\$79<sup>95</sup>



## Collins Pocket Wordmaster

A superb spellchecker for your pocket or purse! With a thesaurus containing 780,000 synonyms for 40,000 words, a 83,000 word spell check and a list of 1,700 confusables. It's based on the Collins English (not U.S.) Dictionary and has many exciting word games with a 50-word personal user list.

\$139

Cat V-7313



## Queen's English Collins Wordmaster

When you're lost for words... Wordmaster can find them! It's incredibly useful for the home, office or study. With all the fantastic features of the Pocket Wordmaster in a larger size. It has well spaced keys, a 780,000 word thesaurus, 83,000 spell checker, 1,700 'confusables' list and more.

\$149

Cat V-7312



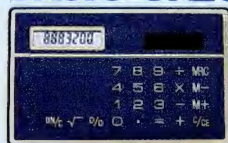
## Collins Language Master

Based on the Collins English (not U.S.) Dictionary, it has definitions for over 83,000 words. As well, there's a thesaurus with 780,000 synonyms for over 40,000 words and a spell checker for over 78,000 words. With many word games, 50-word user list, choice of fonts and a 2-line screen.

Cat V-7314

\$199

## BASIC CALCULATORS



When size counts...  
Slim Card

A super handy 'credit card' size solar-powered calculator. It fits easily into your wallet or purse and makes light work of those restaurant bills, etc. With memory, % and square root keys.

Cat V-3055

\$6<sup>95</sup>



## digitor Pocket Calculator

NEW '93

An easy-to-read 8-digit large display makes this calculator a delight to use! It has all the standard features and you can carry it around in your pocket - you never know when you may need it! At this low price, it's a must!

White Black

Cat V-3710 Cat V-3711

\$8<sup>95</sup>



## SHARP EL869 Micro-solar

A convenient credit-card style calculator with clear 8-digit display, solar power and a 3-key memory with retention of previous display contents. Square root and percentage functions are also included.

Cat V-3807

\$9<sup>95</sup>

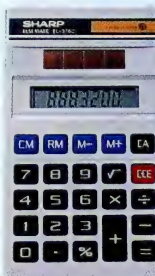


## SHARP EL231 Pocket Power Calculator

This calculator will be a delight to use with a 'no mistakes' double size 'plus' key, auto power-off and 3-key memory. Functions include square root and percent. Requires 2 x AA batteries.

Cat V-3850

\$10<sup>95</sup>

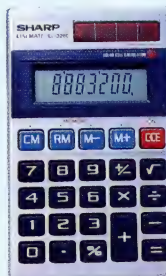


## SHARP EL376 Pocket Solar Calculator

The EL376 features a large 8-digit display, solar power, and a convenient protective wallet. Add to that an oversize 'plus' key and 4-key memory for the perfect pocket calculator. Also features percentage and square root keys.

Cat V-3895

\$12<sup>95</sup>

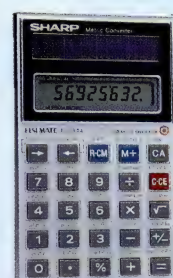


## SHARP EL326 Solar Calculator

Has extras like a 4-key memory and sign change key. It also performs square root and percentage functions, has a 50-lux-low light solar cell an is fitted to a convenient protective wallet.

Cat V-3799

\$17<sup>95</sup>

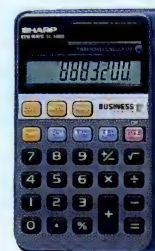


## SHARP EL344 Metric Converter

The solar powered EL344 has 44 useful metric/imperial conversions including pressure, calories, weight and length. It has 3-digit punctuation, 2-key memory, percent and square root making it invaluable for home, school or work.

Cat V-3845

\$32<sup>95</sup>



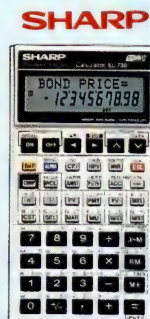
## SHARP EL-480G Business Calculator

NEW '93

A perfect calculator for business! It has a 10-digit display and allows you to work out cost price, sell price or marginal cost. Plus, it features standard mathematic keys and offers % , square root and memory functions.

Cat V-3521

\$32<sup>95</sup>



## SHARP EL-735 Financial & Business Calculator

A 10-digit calculator ideal for many tertiary courses. Features a two-line display, data base function, bond price and yield calculation, days/date calculation, amortisation, IRR, discounted cash flow, statistical and many other financial calculations.

Cat V-3520

\$89<sup>95</sup>



# Calculators

## Scientific Calculators



### N.S.W. H.S.C. approved! CASIO fx-82

The bargain scientific calculator recommended by many schools and colleges. It does fractions, has an 8 + 2 digit display and 54 scientific functions including standard deviation, true algebraic logic, engineering functions, auto power and more! Comes with handy protective case.

Cat V-3820

**\$29<sup>95</sup>**



### Solves Algebraic Equations! **'93 NEW** SHARP EL531GH

A perfect calculator for students! Algebraic equations will no longer trouble you - the EL531GH has direct Algebraic logic which lets you key in algebraic expressions exactly as you would on paper. Plus, it offers 132 scientific functions. Comes in a durable protective hard case.

Cat V-3817

**\$29<sup>95</sup>**

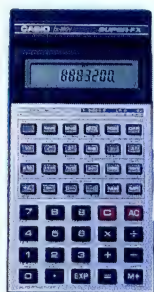


### N.S.W. H.S.C. approved! SHARP EL553 2-Line Screen

Top quality 10-digit scientific calculator! Features 161-functions (making it ideal for high school students), two-line screen for displaying true fractions, large keys for ease of operation, time calculation, and built-in scientific constants.

Cat V-3816

**\$39<sup>95</sup>**



### N.S.W. H.S.C. approved! CASIO fx-100

The Casio fx-100 offers exceptional performance! It features 101 functions, 10 + 2 digit display, base conversions, complex number calculations, logical operations and 18 levels of parentheses. It also does fractions and has auto-power-off with memory retention.

Cat V-3822

**\$47<sup>95</sup>**



### With 133 functions CASIO fx-570

This wallet-style calculator has a built-in library containing all the specialized formulae and functions you could need. Call up the function... fill in the values... and the answer is there on the 10 + 2 digit screen. You can even manipulate values in the fx-570's 7 memories and retain this information after power-off.

Cat V-3857

**\$49<sup>95</sup>**



### With 101 functions CASIO fx-115

A scientific calculator with 101 invaluable formulae and functions. It's solar-powered with battery back-up. Features 18 levels of parentheses, power-off memory retention, 10 + 2 digit display, true algebraic logic, standard deviation and base conversions, it's the only calculator you'll need.

Cat V-3824

**\$59<sup>95</sup>**



### It's Programmable! SHARP EL512H

The Sharp EL512H scientific calculator is designed for the professional, yet priced for the student! Features 10 + 2 digit display, 256 programmable steps, 13 memories, statistical calculations, binary, hexadecimal, octal, co-ordinate conversions, logical operations, absolute values, memory check function and more!

Cat V-3826

**\$79<sup>95</sup>**



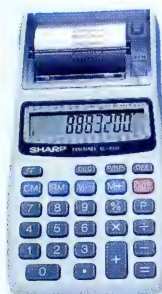
### With electronics & electrical formulae CASIO fx-61

Without a doubt, one of the most useful tools anyone working with electronics could have... 27 of the most used electronic formulas are built in! Includes resonant frequency, impedance, voltage/current gain and even 80 scientific functions. The fx-61 has a 10+2 digit display & it's programmable.

Cat V-3828

**\$79<sup>95</sup>**

## Printer Calculators



### SHARP EL 161IH

A compact hand-held printer calculator which can handle large, plain-paper rolls. It features a large easy-to-read 10-digit LCD display and is AC/DC powered.

Cat V-3891

**\$59<sup>95</sup>**

**'93 NEW**



### SHARP EL 160IH

With its wide keyboard and 10 - digit display, this printer calculator is a delight to use. It's a reliable AC/DC operated model and very compact so you can carry it around with ease. It features a double zero key and item counter with printer.

Cat V-3892

**\$89<sup>95</sup>**

### SHARP EL 1192G

**\$119**

An accurate 10-digit printer calculator with a GT function that automatically accumulates grand totals. Plus, it offers a double-zero key, item counter and adjustable rounding & decimal points. AC-powered.

Cat V-3893



### SHARP EL2192G

**\$129**

Its super large easy-to-read 12-digit LCD display places the EL2192G a step above the rest! It's AC powered and features a GT function that automatically accumulates grand totals, and superb 2 colour printing. It also has adjustable rounding & decimal points, double-zero key, item counter and 3-digit punctuation with printer.

Cat V-3894

### SHARP EL1607G Desk Printer-Calculator

All the professional features needed for heavy-duty business use... a 10-digit display, memory, constant/add mode selector, floating decimal and decimal place selector, an error indicator plus, it's mains powered. Uses plain paper rolls.

Cat V-3885

**\$149**



### Paper Rolls 57mm Paper Rolls

Standard plain paper rolls suits most printer-calculators.(eg: EL1601, EL1192) EL1607, EL2192, TI-5024, TI-5005, TI-5029, TI-5034, EL1611,

Cat V-3017

**\$1<sup>25</sup>**



## Desk Top Calculators

### Digitor Desktop Calculator



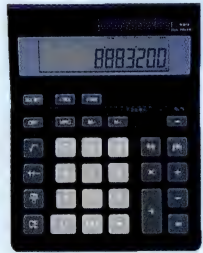
The economical answer to every day maths problems! The Digitor Desktop is as lightweight as a handheld yet it has large, well spaced keys, a double size add key, percentage and square root functions plus

a 4 key memory. Powered by a low light solar cell.

Cat V-3780

**\$14<sup>95</sup>**

### Solar powered Digitor Full Size Desktop



An extra large 12 digit display, sales tax keys and 3 key memory (both with power-off memory retention), floating or fixed decimal place, 2 percentage keys (equate or add), and low-light solar power with battery back-up.

at V-3701

**\$39<sup>95</sup>**

## Memo Masters



**Password security 8062 Data Bank**

A super compact paperless notepad and calculator! Data Bank stores almost any type of information and has a 4Kb memory and a full alphanumeric keypad. It holds phone numbers, appointments, reminder memos and important figures with ease. As well, it has 2 reminder alarms, currency exchange rate calculations and password protection.

Cat V-3600

**\$29<sup>95</sup>**

## Data Diaries

### Sharp ZQ1200 Organiser

It's got everything in one pocket-sized package! You can store all the phone numbers you need in its telephone directory and your memo's will never be lost once they've been entered in your ZQ1200. It also includes a calculator, expense manager and scheduler. With 34K memory.

Cat V-4555

**'93 NEW**

### With data link option Digital Diary SF-4300

A stylish way to mind your own business. It has 32Kb of memory, memo, telephone directory, calendar, world clock, alarm and more. With Qwerty keyboard, secret function, 10 digit calculator, scheduler and reminder, keeping organized has never been easier. As well, it even has a data link option. A superb all-round performer from Casio!

Cat V-4540

**\$159**

## Digitor Adjustable Display Calculator

Is it a desk calculator... is it a handheld? The large 8 digit display tilts to any angle you want. As well, it has a well spaced key pad, Square root, %, +/-, and a 3 key memory. Solar powered with battery back-up.

Cat V-3775

**\$16<sup>95</sup>**



## Canon LS1000H

Ideal for the office! A desk-top calculator with a large, clear 10 digit LCD display. In addition to standard features, it has an adjustable decimal point: 0,2,3 and floating. Plus, it has adjustable rounding for 5/4 and down.

Cat V-3795

**\$69<sup>95</sup>**

**'93 NEW**



**Fantastic Features 2038 Data Master**

Store memos, phone numbers, and appointments with reminder alarms on any entry. Manage the balance of up to 3 credit cards and 3 bank accounts. Perform foreign exchange calculations on up to 3 rates plus all the usual calculator functions. Data Master lets you search and edit entries alphabetically. As well, it has a 10K memory, alarm clock, up/down timers, password security and decision maker.

Cat V-3601

**\$44<sup>95</sup>**

## Casio SF-A10 Data Bank

Get organised with this pocket-sized Icon Data Bank! The Casio SF-A10 provides 24 graphical icons which can be linked to schedules. Its features include telephone directory, schedule, calendar, memo, secret function, both home and world time and currency conversion. Carry it around and keep your life in order!

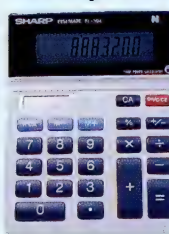
Cat V-4651

**\$139**



**'93 NEW**

## 3 key memory Sharp EL394 Desktop



The convenience of a desktop calculator yet in the size of a standard pocket model. It has an extra large 10 digit angled display, solar power with battery back-up, a 3 key memory as well as % and +/- keys.

Cat V-3794

**\$32<sup>95</sup>**

## SHARP EL-6073 Memo Master



It's one of our most popular electronic Telephone/Address books! Sharp Memo Master has a two line display, search functions for quick data retrieval, password security protection, and a separate schedule mode for storing events, dates and times. It has a full function calculator with 4-key memory and this latest model also stores fax numbers!

Cat V-3673

**\$29<sup>95</sup>**

### Best value pocket diary!

## Sharp EL-6190 Memo Master

This compact memo master delivers maximum performance for your money. With 8Kb of memory, Qwerty keyboard and extensive search facilities. It lets you store up to 500 names and telephone numbers, type in your daily

schedule, calculate the latest figures for your files and you can even check the time. Besides being terrific value for money... it's easy to use!

Cat V-3690

**\$75**



## Compact & affordable SHARP ZQ2200 Series

Get the features of the bigger diaries at an affordable price. With diary, schedule, memo pad, telephone directory, calculator and more, all in one! The large telephone directory files every name & number alphabetically, while the simple to use calendar lets you view any month at a glance. With a Qwerty keyboard and protective case, the ZQ2200 series are compact, packed with features and exceptional value.

ZQ2200  
With 32K Memory  
Cat V-4550 **\$149**

ZQ2400  
With 64K Memory  
Cat V-4551 **\$189**





# Data Diaries

## Advanced Functions

### IQ-8000 Series

Business people and professionals agree: The IQ-8000 series aren't just organizers... they're a way of life! With 'IC' card option, massive memory and optional data links for your PC or 'Mac', they pack a powerful punch. Interactive modes such as telephone, memo, business card and schedule let you take care of business with the minimum of fuss. Other advanced functions include clip & paste, seek, help, index, time, date stamp and dictionary. With a calculator, outline processor, secret function and more, it's easy to see why the IQ-8000 series have become the ultimate organizer and 'survival kit'... for the nineties!

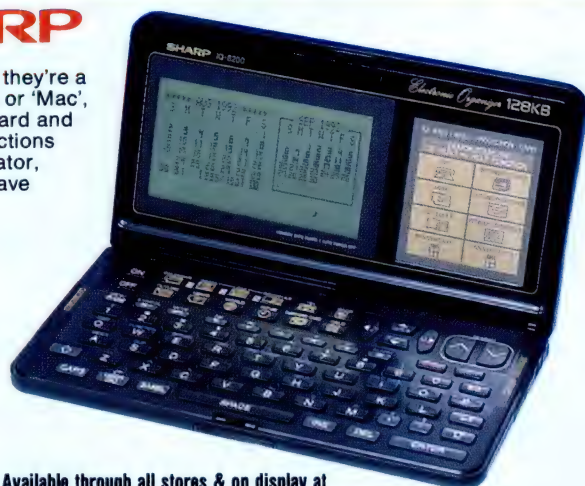
#### Features

- 64Kb, 128Kb or 256Kb memory
- 'IC' card option & Data link facilities
- Calendar
- Three telephone directories
- World Clock & home time
- Schedule
- Memo
- Outline processor
- Business card library
- Calculator (with 3 key memory)

• **IQ8000 (With 64Kb)** **\$399**  
Cat V-4580

• **IQ8200 (With 128Kb)** **\$499**  
Cat V-4581

• **IQ8400 (With 256Kb and 'To-Do List')** **\$649**  
Cat V-4582



\* Available through all stores & on display at selected stores only

With Icon System!

### CASIO SF-9300 \*\*

The latest IC card model from Casio, with easy-to-use icon guided display — it's slimline and sensational! The features include: A superb high-contrast LCD screen, as well as the incredible IC Card System; for expanding your diary's capabilities (cards optional). What's more, it comes with a huge 64K memory, memo, phone directory, business card library and schedule. As well, there's a world clock, calendar, alarms, search and secret functions. To top it off, it has options to connect with a P.C., or Mac or other diaries for data transfer.

Cat V-4653

**\$499** Cat V-4653

\*\* Available on order through all stores.



## Accessories

You'll find a great range of Sharp and Casio IC cards, carry cases, PC and Mac links and other accessories available from all our stores.

### SF8300 \*\* 64K Diary **NEW '93**

With its wide screen, the SF8300 can display 2 months at a time in calendar mode. It's also ever-so-easy to use, thanks to its Icon-guided display. Other functions include:

- Telephone book
- Business Card Library
- Memo
- Scheduler with alarms
- Home and world time
- Optional Data Link (Available separately)

Cat V-4652

**CASIO \$349**

\*\* Available on order through all stores.

With 64K memory!

### CASIO SF-5300

Cat V-4530

**\$239**



Its graphic icons and a simple input system means getting organized has never been easier! The user-friendly design and raised keyboard suits both inexperienced and advanced users. With a world clock (29 time zones), calendar, telephone directory, reminder and memo, it's sensational. It folds away into a neat and stylish unit about the size of a standard calculator. And it has data interface options for exchanging information with a P.C., Mac or another digital diary.

Links to your PC!

### SHARP ZQ5200

Cat V-4552

**\$289**

The ZQ5200 puts a massive 64Kb in your hands. You get a 'Do List', calendar, calculator, schedule, telephone directory, world clock, expense manager and anniversary reminder. What's more, it can link to your PC or Mac for data transfer, (optional cable & software available). With Qwerty keyboard, ten digit calculator and three-key memory. Get a sharp to get organized!



With IC Card System

### SHARP IQ7620

Get Sharp and get organised! It's a calendar, scheduler, phone book, memo, clock, calculator and paperless printer, all in one compact unit. As well, there's the amazing "User File" function which lets you create up to 3 customised filing systems. To top it off, you get the incredible IC card system, letting you expand applications (cards optional). Has 64Kb memory.

Cat V-4576

**\$299**



### SHARP ZQ-6000 Series

**NEW '93**

What a gorgeous display - you'll love the ZQ-6000's huge 40-character high-contrast (Film Super Twist Nematic) LCD screen. It's just perfect for getting a good look at all of this unit's built-in functions: To-Do List, Business Card Library, Outline Processor, 2-Month Calendar, 3-File Telephone Directory, Scheduler, Memo Pad, World/Home Clock and Calculator/Paperless Printer. All this with easy-to-use raised QWERTY keys, data transfer ability and approx. 90-hour battery life! \* Available on order through all stores.

**ZQ-6000 (64K)**  
Cat V-4560

**\$429**

**ZQ-6200 (128K)**  
Cat V-4562

**\$499**







# First With The Latest In Nintendo and Sega!

Check out our huge range of Nintendo and Sega systems. Enjoy exciting video arcade action in your home with your own powerful Sega or Nintendo. Plus, we have heaps of hot action-packed games for you to choose from!



## Handheld Games



Take your pick from our huge range of quality, action-packed handheld games. Catch up with the very latest in handheld fun at these great low prices.

### Twin Screen Games

Hero & Princess Cat Y-7836  
Pirate Cat Y-7837  
Boom Finder Cat Y-7835

**\$22<sup>95</sup> ea**

Plus, we have a wide variety of bargain-priced single screen games from as low as **\$9.95**.

## Talking Battleship Command

Action on the high seas with computerised Talking Battleship Command. It calls out the action as it happens and there are rapid fire sound effects for added realism. Can be played by two players or one player can play the computer. The two boards fold-up and clip together for easy storage and handling. Has 9V DC adaptor socket. Requires 4 x 'C' size batteries.

Cat Y-7048



**\$69<sup>95</sup>**

## Top-of-the-line! Novag 'Crystal'

Enjoy 16 levels of play and all the superb Novag features in a unit that's beautifully finished. Whether you're a novice or a tournament player, you won't find a better computer chess set. Requires 4 x 'AA' batteries or mains adaptor. Cat Y-7086



**\$169**

See our wide range of other Chess Computers.

## Get off-road & into the action! Tamiya Monster Beetle

The incredible Monster Beetle is the off road racer that's almost as good as the real thing. It's an enormous 1/14th scale and it..... goes! Some of the many advanced features include independent suspension, sealed gearbox and diff, interchangeable channel crystals, removable tyres and wheels, high/low gear settings and more! Comes with a 2 channel digital proportional pistol-grip controller and has a recharge jack. It's made from high quality impact resistant ABS plastics so it'll take the knocks and bumps... and come back for more. Car requires 8 x 'AA' batteries and controller requires 1 x 9V battery.

Cat Y-2452

**\$199**



## Aurora AFX Racing Sets

Here's where the action starts... with the fabulous Aurora AFX racer sets. Super fast, high quality racer sets that are built to take the rough and tumble. All of our AFX racer sets come with two controllers, two cars, fly-overs, fences and mains power adaptors. You don't have to be a kid to have fun!



## The kids love them! Quality Walkie Talkies

Two way communications that really works! With easy push-to-talk operation, flexible antenna and belt clip. They have a great range and there's no license required. Each unit requires 1 x 9V battery. A fantastic gift idea. Cat D-1085

**\$24<sup>95</sup>**



## Double-Fire AFX Racing Set

A fantastic set at a great low price! Includes 2 cars with lights and 4 metres of double figure eight track. Cat Y-2487

**\$69<sup>95</sup>**

## Ghost Racer AFX Car Set

The ultimate in action! A huge 5 metres of track and computer control centre which allows you to drive one car while the computer drives the Ghost Racer car. Includes lap counter Cat Y-2489

**\$89<sup>95</sup>**

\* Extra cars and straight or curved track available at your local store!



# Keyboards, Musical Toys & Learning Aids

## Electronic Number Muncher

Cat Y-7129

**\$39<sup>95</sup>**



A great way to teach basic maths to children three years and over. The Electronic Number Muncher has great maths games plus plus six activity buttons all designed to increase your child's number skills... while they're playing. There's a large LCD screen and it doubles as a standard calculator as well. Requires 2 x AA batteries.



## Little Smart Driver

Cat Y-7101

**\$74<sup>95</sup>**



A talking interactive activity centre suitable for ages two and a half years and up! It's a computerised learning aid and has built-in car sounds. The Little Smart Driver teaches children by encouraging play. The car radio features 9 pre-programmed songs and it has velcro securing straps. Requires 4 x AA batteries.



## Video Painter

Cat Y-7282

**\$159**

VIDEO PAINTER

An unbelievable product at a sensational low price! Video Painter is fantastic for children or adults, you can draw, paint and animate your drawings, in full colour, on your TV... and save it all on your VCR!

## 'MC Hammer' Rap Mike

Yo, it's Hammer Time! A totally radical microphone which lets you sing along to fantastic, built-in rap rhythms. With synchronized pulsating LEDs, echo effect and volume control. Requires 4 x AA batteries.

Cat Y-8931

**\$24<sup>95</sup>**



## They can play... straight away! Mini Keyboard

Great for the younger ones! With 8 pre-programmed popular tunes, 19 mini keys, high/low volume control, auto playback and auto power 'off' as well as a demonstration program. A smart gift idea to give your kids a start on musical appreciation. Requires 4 x 'AA' batteries.

Cat Y-7002

**\$19<sup>95</sup>**

\* Colours may vary from illustration



## My Song Maker Sing-A-Long AM/FM Radio

Cat Y-8962

Ideal for children 4 years and over. My Song Maker is a sturdy and colourful AM/FM radio which comes complete with microphone. Children will have a great time singing along with their favourite tunes. It has a DC power jack, so you can save on batteries when it's being used at home. Requires 4 x 'C' size batteries.

**\$29<sup>95</sup>**

\* Colours may vary from illustration

**'93**



## Play-Right Piano

Sensational musical fun for children 5 years and over! This bright and sturdy toy talks, and has a full octave keyboard, 8 favourite nursery rhymes, 10 sound effects, melody memory, rhythm light, volume control and auto power off. Requires 4 x AA batteries.

Cat Y-7014

**\$39<sup>95</sup>**

## Sing-A-Long Cassette Recorder

Cat Y-8960

Designed to be easy for children 3 years and over to use. It's a real cassette recorder which comes complete with microphone so they can sing along with their favourite nursery rhymes, etc. It uses standard cassettes and DC jack. Requires 4 x 'C' size batteries.

\* Colours may vary from illustration

**\$39<sup>95</sup>**







## Electronics Soft Driver

**\$29<sup>95</sup>**

A great way to entertain backseat toddlers. With nursery rhymes, sound effects, 'car phone' and more. Attaches easily to strollers and high chairs. Cat Y-7106



*It talks back!*

## Smart Phone

Loads of fun and it's educational as well. It's perfect for children 3 years and over. With the aid of a computerised voice, Smart Phone helps teach children colours, numbers, letters, etc. It rings and gives a dial tone just like a real phone. Requires 4 x AA batteries.

Cat Y-7107

**\$49<sup>95</sup>**



## Super powerful! Super Computer

The most advanced, powerful learning aid of its type! The ultimate advanced educational gift for kids 8 years and over. The incredible Super Computer is the friendly toy that's just like a notebook computer. It talks and takes children through 22 fantastic learning activities including 10 language skills activities, 7 number skills activities and trivia questions covering a range of essential topics. What's more, two can play the games, with separate scores on screen. Super computer requires 4 x 'C' size batteries (also has a 9V DC jack).

Cat Y-7272

**\$179**

## *It talks back!* Small Talk Activity Centre

The perfect gift for pre-schoolers. It talks and has 10 friendly phone mates to interact with, a full octave keyboard, six animal sounds and more. Fun and learning for children 2-4 years of age.

Cat Y-7103



**\$64<sup>95</sup>**



## Master the keyboard, easily! Type-Right MkII



A fantastic idea for students, executives, job hunters, etc. Teach yourself to use a keyboard (if you work with computers, you'll need it!) and learn to type up to 45WPM. It's a programmed system that makes learning the keyboard challenging... and fun as well. Constantly checks speed and calculates errors.

Requires 4 x 'C' size batteries.

Cat Y-7100

**\$79<sup>95</sup>**



## Notebook Junior

Educational fun designed to assist the development of your child's language, maths and general knowledge skills. The lap-top styled Notebook features electronic voice, 14 in-built activities and 25 double-sided activity cards. It is ideal for children aged 6 years and up.

Cat Y-7263

**\$99<sup>95</sup>**



**NEW '93**



### Additional Cartridges

World Trivia  
Geography/Science  
Bible Trivia

Cat Y-7273  
Cat Y-7274  
Cat Y-7275

**\$29<sup>95</sup> ea**

## 'JC' My Junior Computer

**\$129<sup>95</sup>**



One of our most popular computerised learning aids! It's perfect for children 6 years and over... they love it. Just like a lap-top computer, with 17 games and super sharp resolution. A realistic voice helps them learn while they're playing. Folds away for easy storage and carrying. What's more, once they master the basic unit, you can get additional activity cartridges for even more learning fun. Requires 4 x 'C' size batteries.

Cat Y-7266

### Additional Cartridges

Memory Cartridge Cat Y-7265  
Activity Cartridge 1 Cat Y-7267  
Activity Cartridge 2 Cat Y-7268

**\$26<sup>95</sup> ea**



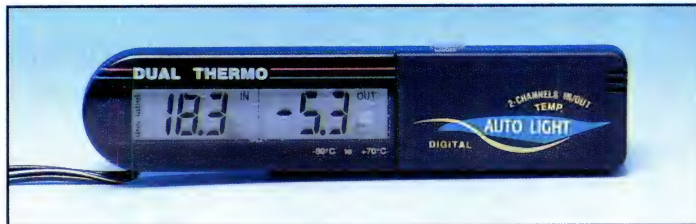
## Miscellaneous

### Analog Quartz Wall Clock

**\$19<sup>95</sup>**

Large, easy-to-read numerals make this an ideal kitchen clock. It's battery-powered and keeps excellent time.

Cat Y-1046



### Car Thermometer With Backlight

A dual thermometer that's ideal for use in your car. It fixes to the dashboard with (supplied) double-sided tape and plugs into the cigarette-lighter power socket. Place the external sensor with its 3-metre cord on the car's exterior and you'll know the outside and inside temperature at a glance!

Cat Y-5006

**NEW '93** **\$29<sup>95</sup>**

### Timer Clock With Memory

**\$19<sup>95</sup>**



Great for timing cooking, phone calls, medication, etc. Compact 24 hour timers. It counts up and down and comes complete with battery.

Cat Y-1023

### Microwave Oven Leakage Detector

Cat Y-4100

**\$26<sup>95</sup>**



It allows you to check the seam around the oven door and detect if there's a leak. Measures as low as 0.1 milliwatt psc. An analogue meter tells you immediately if there's a problem. There are no batteries, switches or adjustments... so it's easy to use!

*Unbelievable performance!*

### Micro-Furnace Heater II

Cat Y-8901

**\$199**

Amazingly effective and efficient! Space age technology has helped to create this incredibly compact, amazingly powerful fan heater. It's small enough to fit on a book shelf and yet performs like a floor model. It's mains-powered (240 volts) and has adjustable temperature control. Plus, it's super safe - it switches off automatically if knocked over!



**\$499**

### The Professional's Detector

Australian made to the highest quality, the Eldorado MkII metal detector is ideal for professional prospectors, tradesmen (great for underground pipes) or the weekend fossicker.

Extremely lightweight with adjustable forearm strap, it's easy to operate and has a headphone jack. Requires 2 x 'AA' batteries.

Cat Y-8910



### Rain Checks

On the rare occasion that your nearest Dick Smith Electronics store has run out of a current \*advertised line, simply ask for a Rain Check! As soon as the stock arrives (which is never very long), your Rain Check assures you of getting it (or a comparable product) at the advertised price - even if the relevant promotion has ended! At Dick Smith Electronics, come rain or shine, we stand by our word!

\* Rain checks not available where stocks are advertised as limited, discontinued or clearance lines.





## Talking Clocks

Set it to 'tell' you the time every hour or at the touch of a button it will 'tell' you instantly. The Talking Clock will give you an entirely new outlook on the concept of 'telling time'! It has a digital readout, two alarm modes and 12/24 hour time as well. Available in two sizes. Each requires 3 x AA batteries.

**Talking Clock** Model T10 Cat Y-1003 **\$39<sup>95</sup>**  
**Mini Talking Clock** Model MT10 Cat Y-1008 **\$29<sup>95</sup>**



## Traveller's Talking Alarm Clock

Makes the ideal gift for the traveller! Folds away neatly to fit in pocket or bag. With 12/24 hour time, selectable hourly spoken time report, spoken time report at the touch of a button, 2 alarm modes, 2 position volume control. LCD time display and more. It's compact, lightweight and beautifully made. Requires 3 x AAA batteries. Model T25.

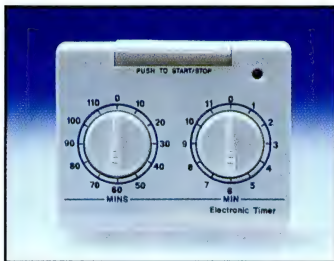
Cat Y-1002 **\$39<sup>95</sup>**



## Talking Digital Watch

Yes, it 'tells' you the time! Set it to tell you the time every hour, or just when you push the button. Turn the alarm on and it says... "Alarm On". It's ideal for anyone with impaired sight and makes a great gift idea as well. Model WA1.

Cat Y-1149 **\$29<sup>95</sup>**



## Electronic Timer

Ideal for photographic work, phone calls, sunbathing, cooking..... anything! You can time anything from 1 to 121 minutes. Just set the time and push the convenient start/stop bar. There's also a red LED 'on' indicator and an audible time over buzzer. Requires a 9V battery.

Cat Y-1019 **\$9<sup>95</sup>**



## Mini Clock Timer

Super small and it's great for timing cooking, sports, medication, etc. It's a 24 hour timer and clock in a super compact package that can be put on a shelf, clipped to your belt and has a magnet so it can be left on the fridge, etc. It counts up/down in one second increments. Comes with long life battery.

Cat Y-1022 **\$12<sup>95</sup>**



## A novel gift idea! Floating Pen Clock

Great for the telephone table or the desk. The floating pen clock will defy gravity before your eyes! The pen stands upright in the cradle as if by magic. Stand incorporates an accurate digital LCD clock. It makes a fantastic, and inexpensive, gift.

Cat Y-1001

**\$5<sup>95</sup>**



## Quartz Travel Clock Jumbo Time!

A great mini travel clock and calendar that takes-up next to no room in your pocket or bag (it's smaller than a matchbox), yet has huge, easy to read digital readout. There's also a handy fold-out stand, or you can fit it to the dashboard of your car with the velcro tape supplied, and it comes complete with battery.

Cat Y-1009 **\$7<sup>95</sup>**



## Travel Alarm Clock

A pocket sized travel alarm clock with snooze function at a great low price. With large LCD display, so it's easy to read, and back-light button for night reading. It folds away into a hard, wallet sized, travel case for maximum protection.

Cat Y-1004 **\$12<sup>95</sup>**



## LCD Analogue Alarm Clock With back-light!

This fantastic quartz accurate alarm clock is tiny and has an LCD screen which imitates a clock with hands... it even has a second hand. At the touch of a button the display is back-lit for easy night reading. There's also a folding stand and it comes with battery and velcro tape.

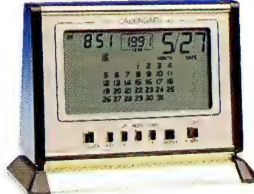
Cat Y-1043 **\$16<sup>95</sup>**



## Mini Calendar Clock

A great little calendar clock which can be fixed to the desk or car dashboard with velcro (supplied). Just push the button and the liquid crystal display is backlit for easy night reading. Comes complete with long life (3 year) battery.

Cat Y-1044 **\$19<sup>95</sup>**



## 200 Year Calendar Clock

Ever wondered what day you were born? or what day an anniversary would fall on? This elegant calendar clock can tell you. The 200 year calendar shows 1901 to 2099. There's also an alarm with snooze control. And it comes complete with a long life battery.

Cat Y-1010 **\$39<sup>95</sup>**



## Women's LCD Watch

An attractive ladies watch with gold-coloured rim and black face. It has a liquid crystal display.

Cat Y-1170 **\$7<sup>95</sup>**

## Men's Water Resistant Watch

A reliable men's watch with five functions: Hour, minute, second, day and date. It has a large liquid crystal display.

Cat Y-1171 **\$8<sup>95</sup>**

## Men's LCD Chronograph

A watch with stop watch and alarm functions. It comes on a metal band.

Cat Y-1172 **\$9<sup>95</sup>**





## Keyfinder

You need never lose your key again! With a Keyfinder keyring your keys are only a whistle away. A fantastic and inexpensive gift idea. Cat Y-1070

**\$1.95**



## Echo Colour Keyring

It's a great way to relieve all that built-up tension. Echo Killer Keyring has nine colourful sound effects buttons..... you can fire a missile, launch a grenade or chop it down with a machine gun. Say goodbye to aggression!

Cat Y-1069

**\$3.95**



## Talking Clock Keyring

A fantastic idea! A Keyring that is also a 'talking clock'. It 'tells' you the time at the touch of a button, or it can be set to announce the time every hour. Also has an alarm function and an LCD readout. Ideal for the visually impaired.

Cat Y-1068

**\$17.95**

## Bargain Door Chimes



Do people keep knocking and you don't let them in? With these great value Door Chimes you won't leave them out in the cold. They're easy to fit and they come with cable, fixing screws and button. Choose from our 'Avon Lady' style with a straight ding-dong or one that plays 12 different melodies.... both offer fantastic value.

**Ding-Dong Door Chime** Cat Y-8400 **\$9.95**

**12 Melody Chimes** Cat Y-8402 **\$12.95**

*Convenience plus!*

## Wireless Door Chime

There's no wiring! This has to be one of the most sensible ideas for a door chime ever. Beautifully styled and built and at a bargain price. The doorbell button can be fixed to the wall in minutes and the bell (receiver) unit can be clipped to your belt, fixed to the wall or put on a shelf. It has a range of approximately 100 feet (30.48m). Additional receiver units are also available. Bell button requires 2 x AAA batteries and receiver (bell) requires 2 x AA batteries.

Cat Y-8405

**\$24.95**

**Additional Receivers** **\$16.95**

Cat Y-8406



## No more fridge odours! Refrigerator Ozone Deodoriser

No chemicals, no fuss! The modern, easy and environmentally safe way to eliminate refrigerator odours. Refrigerator Mate electronically converts smelly and musty air into sterile odourless ozone and helps eliminate mould and bacterial build-up. The timer can be set for 6 or 12 minute intervals and it can operate either manually or automatically. Requires 4 x 'C' size batteries.

Cat Y-4101

**\$22.95**



## Digital Tyre Pressure Gauge

Fast, efficient and highly accurate! Simply place Accutire electronic tyre gauge over the valve stem and push the button. It has a large easy-to-read display, and it's made from durable, high impact resistant ABS plastic. Measures pressure in psi/bar/kpa units. Lifetime lithium battery.

Cat Y-5034

**\$29.95**



## Incredibly Inexpensive! Economy Quartz Stopwatch

Ideal for sports people, technicians or anyone needing split second accuracy. Easy to read LCD display, split/lap times, normal time (hrs/mins/sec) and calendar. Stop/start feature allows you to interrupt timing without having to reset. Comes with handy nylon lanyard.

Cat Y-1051

**\$9.95**



## High Quality Digital Stopwatch

A quality stopwatch with 24 hour stopwatch function, 1/100 second readout, and split/lap time. The time display is available in either 12 or 24 hour modes, the calendar automatically adjusts between odd and even months and it's water resistant. Comes complete with nylon lanyard.

Cat Y-1050

**\$24.95**



For batteries of all sizes, turn to pages 51 & 52.





## A. Heavy Duty Lantern

Extra heavy duty makes it ideal for site work, etc. With adjustable head, large lens, emergency orange flasher and super bright halogen bulb. Requires screw-connect 12V battery (S-3242). Cat Y-1077

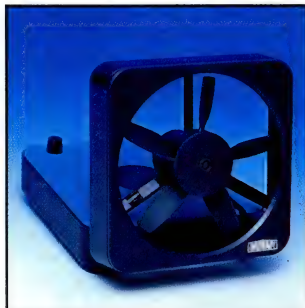
**\$49<sup>95</sup>**

## B. Halogen Lantern

Ideal for the boat, car, around the house, etc. It's waterproof and it floats! With super bright halogen bulb for the brightest light. Requires lantern battery (S-3240).

**\$29<sup>95</sup>**

Cat Y-1076



## Personal Portable Fan

Just what you need when things start to get hot—your own personal fan. 'The Fan' is small enough to carry around in your bag or briefcase and can give up to 300 hours cooling on just one set of batteries. The speed and the angle of the blades is adjustable for maximum cooling. Requires 4 x 'D' size batteries or 6V DC plug pack.

Cat Y-8520

**\$24<sup>95</sup>**

## C. Flashlight

Sturdy, lightweight and up to 300% brighter than conventional torches. Requires 2 x 'D' size batteries.

Cat Y-1078

**\$16<sup>95</sup>**

## D. Mini Pocket Light

Perfect for the purse, pocket, car glove-box, etc. Gives a good strong halogen beam. It's light and compact.

Cat Y-1079

**\$9<sup>95</sup>**



## Eveready Rechargeable Torch Wizz

This torch never needs batteries! It simply plugs into any 240V powerpoint and is fully charged in just 12 hours. Rechargeable up to 1000 times.

Cat Y-1120

**NEW 93**

**\$24<sup>95</sup>**



## Weather Watch

A modern sporty-look wall clock with built-in thermometer and barometer! It's from Energizer, so you know you can depend on the quality. What's more, it's outstanding value. Comes complete with battery (1 x AA) and is easily wall mounted.

Cat Y-1042

**\$29<sup>95</sup>**



## Mini-Torch Keyring

A great little light at a bargain price. It has an adjustable beam, keyring clip and only requires one AA size battery.

Cat Y-1107

**\$7<sup>95</sup>**



## Heavy Duty Flashlight

A solid and professional quality flashlight for tradesmen, campers, and anyone who needs a dependable torch. Requires 3 x 'D' size batteries.

Cat Y-1091

**\$19<sup>95</sup>**



## Rechargeable Keylight

Cat Y-1105

**\$6<sup>95</sup>**

Here's another bright idea! You'll never be left in the dark with keylight. It comes complete with a high quality keyring and plugs straight into your car cigarette lighter to recharge... so there are no batteries to buy.

## Multi 2-in-1 Spotlight & Blinker

A handy torch and blinker which doubles as a hazard light. At this low price it's worth keeping one in the car. As well, it's great for when the kids go camping or on 'night manoeuvres'.

Cat Y-1090

**\$7<sup>95</sup>**



## Multi Purpose Fluorescent Lantern

Here's a torch which is great for camping, fishing, looking under the house or when there's a power blackout. It has a wide beam spotlight, fluorescent lamp and emergency flasher. Requires 6 x D size batteries.

Cat Y-1089

**\$15<sup>95</sup>**



## Eveready Explorer Flashlight

A sensational flashlight and free standing lantern from Eveready. It's sturdy, compact and has an adjustable beam focus. Ideal for travelling, camping or keeping in the car glovebox. Requires 4 AA size batteries.

**\$12<sup>95</sup>**

Cat Y-1101



## The All Rounder Light

A fluorescent lamp, a spotlight and an emergency flasher in one. It's perfect for the caravan, camper, workshop... or the home. Incorporates a convenient carry handle. Requires 4 x 'D' size batteries.

**\$29<sup>95</sup>**

Cat Y-1094

## The Shed Light

A great way to get light into the shed, garage, attic, cellar, etc! It's a battery powered fluoro with independently mounted switch. Can be fitted in next to no time. Requires 6V lantern style battery.

**\$26<sup>95</sup>**

Cat Y-1102



## My-Lite Flashlight

A quality mini flashlight that's made from sturdy machined aluminium, it's water resistant and shock proof. With spare bulb and requires 2 x AA batteries.

Cat Y-1103

**\$10<sup>95</sup>**

## Compact Pocket Torch

This easy-to-use torch is tiny, yet throws a strong beam of light. Has a strong, machined aircraft aluminium case and comes complete with 2 x AAA batteries and a 12 month warranty.

Cat Y-1110

(Not illustrated)

**ARLEC**

**\$10<sup>95</sup>**

Looking for.....

**Bulbs - See Page 181**  
**Batteries - See Page 52**

Perfect for camping, working around the car, etc! Super bright halogen spotlight that's powered by the car battery (comes with adaptor). With pistol grip handle for ease of use. What's more, you can use it for hours without flattening the car battery.

Cat Y-1109

**\$22<sup>95</sup>**





# Health Products



## Negative Ion Generators

For many people a negative ion generator is the healthy solution to rooms choked with cigarette smoke and pollutants, or robbed of negative ions by air conditioners. Here are two compact models to choose from....

**For The Home Or Office. \$79<sup>95</sup> ea**

Mains powered.

Cat Y-9000

**For The Car.**

Comes with cigarette lighter power adaptor.

Cat Y-9002

## Electric Toothbrush

4 Extra Brushes

Cat X-8992 **\$1.50**

Better for your gums. With four detachable brushes - one for every member of the family!

**\$7<sup>95</sup>**



Requires 2 x C batteries.

Cat Y-8991

## Dual Alert Temperature Readout

**\$29<sup>95</sup>**



A great idea for the nursery or sick room, this attractive thermometer with an external probe allows you to keep an eye on the temperature in two places at once. You can also set it to alert you if the temperature falls outside set limits. Comes complete with probe on a 3m cable and battery.

Cat Y-5011

## Dual Temperature Thermometer

Allows you to monitor the temperature in two places as once. Great for indoor/outdoor temperature readings or for keeping an eye on the baby's room, greenhouse, etc. It's very compact but with large, easy to read liquid crystal display. Comes complete with battery.

Cat Y-5007



**\$24<sup>95</sup>**

## Indoor/Outdoor Digital Thermometer

**\$19<sup>95</sup>**



Now you can check the outside temperature without leaving your house! Its easy-to-read jumbo LCD display shows the climate either indoors or out at the touch of a switch. Comes complete with exterior sensor (on 3-metre cable), mounting tape and battery.

Cat Y-5001

## Digi Walker

A digital calorie and pedometer. A micro-computer calculates calorie consumption according to the intensity of the exercise. It's super small and has a belt clip. Comes with battery.

Cat Y-5002

**\$39<sup>95</sup>**



## Blood Pressure Monitor

Manage your health with our budget digital blood pressure meter. Using the highly accurate oscillometric method of measurement it gives systolic and diastolic pressure as well as pulse. Its LCD display tells you instantly what procedure to follow. Model 403C.

Cat Y-5095

**OMRON**

**\$109<sup>95</sup>**



## Slimline Bathroom Scales

Highly accurate (uses a strain gauge instead of springs) and only 25mm thick! Electronic bathroom scales with auto zero set and large, easy-to-read LCD display. Reads to 0.5kg. Comes complete with lithium batteries and a full, one year manufacturer's warranty.

Cat Y-5027

**\$79<sup>95</sup>**



## Indoor/Outdoor Thermometer

A compact electronic thermometer with external probe so you can measure indoor and outdoor temperatures at the touch of a button. It even has clock function - comes with probe and two metre cable.

Cat Y-5003

**\$26<sup>95</sup>**

## Electronic Head Lice Killer



The Robi Combi is a safe, chemical-free alternative for both the treatment and prevention of lice infestation. If you have school-age children, you need one of these. Simply run it through the child's hair and say goodbye to head lice and their eggs. Requires 1 x AA battery.

Cat Y-5084

**\$69<sup>95</sup>**

**OMRON**

**\$179**

## Automatic Blood Pressure Monitor

Allows simple, convenient and accurate measurements of blood pressure and pulse to be taken in the privacy of your home. The cuff automatically inflates for extra convenience and it has velcro strips for easy fastening. It comes complete with soft carry case, batteries and full instructions. Accurate to +/- 3mm Hg and 5% of pulse reading. Model 703C.

Cat Y-5096



## Digital Converter Scales

Saves complex metric conversions - just flick a switch! Accurate digital scales that are ideal for kitchen, use. With easy to read digital display, they measure in Grams or Ounces. Maximum capacity of 2kg. Requires 6 x AA batteries and has DC jack.

Cat Y-5024

**ARLEC**

**\$59<sup>95</sup>**



## Toshiba Digital Thermometer

Accurate temperature readings are easy with this safe Toshiba clinical thermometer...it makes temperature taking foolproof! And there's no dangerous mercury or possible glass breakages. Comes with protective case and features time beeper, high accuracy and auto power 'off'.

Cat Y-5008

**\$19<sup>95</sup>**

**OMRON**

## Electric Massager

Just what you need after one of those all-too-hard days! It's perfect for soothing those tired, aching muscles.

The electric massager is light, fits in the palm of your hand and switches on automatically....when you apply pressure to the massaging disk. What's more, it has a smart cosmetic appearance and because it's battery operated, it's ideal for carrying around in your purse, bag, car, etc. Requires 2 x 'C' size batteries.

Cat Y-5091

**\$29<sup>95</sup>**





## ENERGIZER®

### Energizer

Eveready Alkaline Energizers are recommended for extra heavy duty applications where a constant power supply is essential.

No./Size	Cat No.	Price
2 x AAAA	S-3275	<b>\$4.95</b>
2 x AAA	S-3278	<b>\$4.25</b>
4 x AAA	S-3276	<b>\$7.75</b>
2 x AA	S-3281	<b>\$3.75</b>
4 x AA	S-3287	<b>\$6.75</b>
6 x AA	S-3290	<b>\$9.95</b>
2 x C	S-3282	<b>\$5.50</b>
2 x D	S-3284	<b>\$5.75</b>
1 x 522 (9V)	S-3286	<b>\$5.75</b>
2 x 522 (9V)	S-3215	<b>\$10.50</b>
2 x 'N'	S-3288	<b>\$4.25</b>

### Eveready Black

Super heavy duty batteries in economical Smart-Packs. Batteries will remain fresh for up to 3 years in these handy Smart-Packs, so you'll always have power when you need it.

No./Size	Cat No.	Price
12 x AA	S-3110	<b>\$10.50</b>
6 x C	S-3112	<b>\$8.75</b>
4 x D	S-3114	<b>\$6.25</b>

### Photographic Batteries

High quality batteries designed especially for the high power demands of photographic equipment.

Type	Description	Cat No.	Price
E400N	1.35V	S-3076	<b>\$6.50</b>
S76	1.5V Silver	S-3080	<b>\$6.95</b>
2L76	3V	S-3060	<b>\$14.95</b>
E164	5.6V Mercury	S-3074	<b>\$16.95</b>
EPX675	Mercury	S-3066	<b>\$6.25</b>
EL223AP	6V Lithium	S-3067	<b>\$29.95</b>
EL2CR5	6V Lithium	S-3068	<b>\$29.95</b>
A544	6V Alkaline	S-3289	<b>\$8.95</b>
J539	6V Alkaline	S-3072	<b>\$8.95</b>

### Calculator/Games Batteries

Long life Lithium calculator batteries in all the popular sizes to suit most scientific and statistical calculators. Blister packed for freshness.

Type	Cat No.	Price
EL123AP	S-3334	<b>\$19.95</b>
ECR1616	S-3333	<b>\$4.25</b>
ECR2016	S-3332	<b>\$4.25</b>
ECR2025	S-3330	<b>\$4.25</b>
ECR2032	S-3331	<b>\$4.25</b>
ECR2430	S-3336	<b>\$5.50</b>

All the popular Eveready button-batteries for calculators and games. In economy packs of two.

No./Type	Cat No.	Price
2 x A76	S-3061	<b>\$3.95</b>
2 x 186	S-3062	<b>\$3.95</b>
2 x 189	S-3063	<b>\$3.95</b>

### Mercury Electronics Series

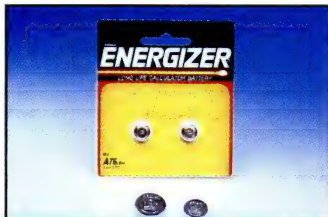
As used in miniature radios and electronic instruments. Individually packed.

Type	Description	Cat No.	Price
E401	1.4V	S-3070	<b>\$6.50</b>

### Remote Controller/Lighter/Security Type Battery

A23 x 12 volt battery as used in remote control door switches, cigarette lighters, car alarm remotes, etc.

Cat S-3335 **\$2.25**



## EVEREADY®

### Heavy Duty

The traditional and reliable Eveready reds as used in lanterns, torches, and radios.

No./Type	Cat No.	Price
6 x AA	S-3090	<b>\$4.75</b>
AA 1.5V	S-3100	<b>.85</b>
C 1.5V	S-3102	<b>\$1.15</b>
D 1.5V	S-3104	<b>\$1.30</b>
631 6V	S-3244	<b>\$15.95</b>
509 6V	S-3240	<b>\$6.25</b>
216 9V	S-3106	<b>\$2.95</b>
732 12V	S-3242	<b>\$29.95</b>



### Lantern Batteries

Type	Description	Cat No.	Price
509	6V Heavy Duty	S-3240	<b>\$6.25</b>
529	6V Energiser	S-3245	<b>\$39.95</b>
731	6V Screw terminal	S-3244	<b>\$15.95</b>
732	12V Screw terminal	S-3242	<b>\$29.95</b>
PKL1200 WC Rechargeable		S-3243	<b>\$59.95</b>



### Video Camera Batteries

A complete range of Energizer rechargeable NiCads to suit most video cameras. Check your local store for cross reference guide.

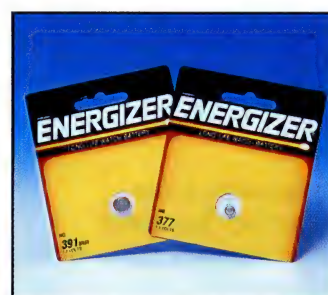
Type	Description	Cat No.	Price
ENP55	6V 1000mAh	S-3343	<b>\$54.95</b>
ENP22	6V 1200mAh	S-3341	<b>\$49.95</b>
ENP22H	6V 1700mAh	S-3342	<b>\$64.95</b>
ENP77	6V 2000mAh	S-3345	<b>\$99.00</b>
EBNV7GU	9.6V 1000mAh	S-3346	<b>\$99.00</b>
ENBP8V	9.6V 1600mAh	S-3347	<b>\$95.00</b>
EVWVBM7E	12V 2000mAh	S-3348	<b>\$99.00</b>
ES2E		S-3349	<b>\$129.00</b>



### High Performance Watch Batteries

1.5 volt silver oxide batteries to keep your watch running longer. High drain are suitable for watches with LED display, backlight or alarm. Low drain are suitable for most others.

Type	Description	Cat No.	Price
357	High Drain	S-3293	<b>\$4.50</b>
381	High Drain	S-3291	<b>\$3.25</b>
386	High Drain	S-3295	<b>\$3.25</b>
389	High Drain	S-3292	<b>\$3.25</b>
390	High Drain	S-3294	<b>\$3.25</b>
391	High Drain	S-3296	<b>\$2.95</b>
392	High Drain	S-3299	<b>\$1.50</b>
396	High Drain	S-3049	<b>\$2.95</b>
362	Low Drain	S-3050	<b>\$2.95</b>
364	Low Drain	S-3051	<b>\$2.95</b>
377	Low Drain	S-3055	<b>\$3.25</b>
384	Low Drain	S-3052	<b>\$2.95</b>
397	Low Drain	S-3054	<b>\$2.95</b>
379	High Drain	S-3298	<b>\$3.25</b>



### Hearing Aid Batteries

High quality Eveready Hearwell Zinc Air batteries to fit most popular hearing aids. In handy dispenser packs of four.

Type	Cat No.	Price
AC13E	S-3039	<b>\$4.25</b>
AC675	S-3038	<b>\$4.25</b>
AC312E	S-3040	<b>\$4.25</b>



### Battery Tester

It's so easy to get batteries mixed up in the kitchen drawer.... why not test them to save throwing out the good ones? The battery tester is easy to use and doesn't have batteries of its own. Tests all the most used batteries from 'D' cells through to button cells including 9 volt.

Cat Y-5018 **\$5.95**





# Rechargeable Batteries

## Dick Smith Electronics Heavy Duty NiCads

For long life, high power, and reliability.... quality high capacity, Japanese made NiCad batteries in the most popular sizes. They're sold individually and they all carry our guarantee of quality. What's more, they're exceptional value for money.

Type	Description	Cat No.	Price
AA	600mAh	S-3312	<b>\$4.95</b>
C	2Ah	S-3311	<b>\$11.95</b>
D	4Ah	S-3310	<b>\$15.95</b>



## EVEREADY®

## Eveready 'Recharge'

Eveready Recharge... what more can we say?

No./Type	Cat No	Price
2 x AAA	S-3166	<b>\$9.95</b>
2 x AA	S-3168	<b>\$9.95</b>
4 x AA	S-3170	<b>\$18.95</b>
2 x C	S-3172	<b>\$17.95</b>
2 x D	S-3174	<b>\$18.95</b>
1 x 216 (9V)	S-3176	<b>\$23.95</b>



## ARLEC

## Arlec Rechargeables

Reliable black label NiCads from Arlec. You know the name, you can be sure of the quality.

No./Type	Cat No.	Price.
2 x AAA	S-3406	<b>\$9.95</b>
2 x AA	S-3407	<b>\$9.95</b>
2 x C	S-3408	<b>\$17.95</b>
2 x D	S-3409	<b>\$18.95</b>



## Maintenance-free Apollo Sealed Rechargeable Batteries

Don't risk messing about with conventional lead-acid batteries for indoor applications. These gel cells require no maintenance, are leak proof, and can be either trickle charged or fast charged. They're ideal for emergency lighting systems, computer memory back-up supplies, security alarms and test equipment. Recharging time depends on their depth of discharge. You will need to put back 125% of the current that has been used to fully recharge the battery.

## Apollo

### 12V 1.2Ah



100 x 55 x 45mm Cat S-3315 **\$29.95**

### 12V 1.9Ah



178 x 60 x 34mm Cat S-3316 **\$32.95**

### 12V 2.7Ah



125 x 95 x 35mm Cat S-3320 **\$37.95**

### 12V 6.5Ah



151 x 96 x 65mm Cat S-3322 **\$49.95**



## Dick Smith Electronics Rechargeables

Our own brand rechargeable NiCad batteries are chosen for their high quality, high reliability and value for money. Quality NiCads made in Japan.

## Battery Blister Packs

No./Type	Desc.	Cat No.	Price
4 x AA	500mAh	S-3150	<b>\$14.95</b>
2 x C	1.2Ah	S-3152	<b>\$15.95</b>
2 x D	1.2Ah	S-3154	<b>\$15.95</b>

## Individual Batteries

Size	Desc.	Cat No.	Price
AAA	180mAh	S-3305	<b>\$4.50</b>
AA	500mAh	S-3300	<b>\$4.50</b>
C	1.2Ah	S-3301	<b>\$8.50</b>
D	1.2Ah	S-3303	<b>\$8.50</b>



## Cordless Product Rechargeable Batteries

Cordless phones and similar devices need high performance batteries which can be constantly charged and discharged. These batteries will fit most cordless phones.



Varta TR7/8 True 9V 100mAh  
3.6V button cell Varta suit F-7005  
Nicaid 'C' size  
Varta 3/170 3.6V button cell  
Varta 3/V280R  
3 x AA Cell-pack 3.6V  
3.6 Volt/N270AA Cordless Phone Battery  
GP 280k 4.8V  
Nicaid 'C' size 2Ah with solder tab  
NiCad AA size 600mAh with solder tab

Cat S-3308	<b>\$24.95</b>
Cat S-3314	<b>\$19.95</b>
Cat S-3324	<b>\$7.95</b>
Cat S-3325	<b>\$19.95</b>
Cat S-3326	<b>\$19.95</b>
Cat S-3327	<b>\$14.95</b>
Cat S-3328	<b>\$29.95</b>
Cat S-3329	<b>\$19.95</b>
Cat S-3411	<b>\$11.95</b>
Cat S-3412	<b>\$4.95</b>

## NiCad Battery Packs

NiCad battery packs to suit most types of remote control racing cars, etc.

9.6 Volt	Cat S-3313	<b>\$29.95</b>
7.2 Volt	Cat S-3323	<b>\$49.95</b>



## Battery Holders

Description	Cat No.	Price	Description	Cat No.	Price
4 x 'AAA' Side by side	S-6140	<b>\$1.55</b>	1 x 'C'	S-6103	<b>\$1.35</b>
2 x 'AA' snap terminal	S-6112	<b>\$ .80</b>	4 x 'C' cells. Flat	S-6104	<b>\$1.85</b>
4 x 'AA' Long and flat	S-6114	<b>\$1.05</b>	1 x 'D'	S-6101	<b>\$1.05</b>
4 x 'AA' Square	S-6124	<b>\$1.05</b>	4 x 'D' Side by side	S-6102	<b>\$2.00</b>
6 x 'AA' Rectangular	S-6116	<b>\$1.35</b>	216 9 Volt	S-6150	<b>\$4.95</b>
8 x 'AA' rectangular	S-6128	<b>\$1.55</b>	216 9 Volt Battery snap	S-6100	<b>\$ .40</b>
10 x 'AA'. White	S-6130	<b>\$1.95</b>	Lithium button type	S-6160	<b>\$4.95</b>

## Quality Fuji Colour Film

Superb quality Fuji colour film in all the popular formats.

Type	ASA	Cat No.	Price
135/24	100	Y-7905	<b>\$6.25</b>
135/36	100	Y-7926	<b>\$8.25</b>
135/24	200	Y-7928	<b>\$6.95</b>
135/24	400	Y-7929	<b>\$7.95</b>







## High Capacity Battery Charger

Charges up to 8 high capacity NiCad batteries at once... in almost any combination! Charges 600mAh 'AA', 1.8Ah and 2Ah 'C', 4Ah 'D' cells and up to 4 x 9V at their correct rates. Includes an indicator light for each compartment. Simply plugs into the mains.

Cat M-9506

Batteries not included

**\$44<sup>95</sup>**



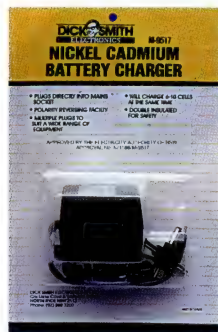
Outstanding value!

## Universal Charging Cabinet

Charges 8 batteries at once... AAA, AA, C, D, and 9 volt batteries in almost any combination. Outstanding value and performance make this one of the best buys around. You can charge just one battery or fill up the entire eight spaces. It'll even charge three 9 volt batteries at once. Includes an indicator light for each compartment and test meter. Simply plugs into the mains.

Cat M-9505 Batteries not included

**\$44<sup>95</sup>**

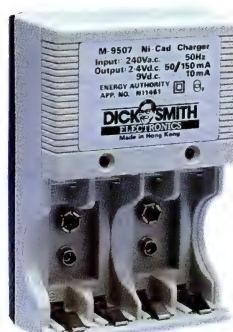


## Plug In Nicad Battery Charger

**\$19<sup>95</sup>**

Designed for devices which allow for an external charger to be plugged in for easy recharging without removing the batteries.... some recorders, personal stereos, etc. This one will recharge 7.2 - 12 volt cells. Comes with multi-way adaptor to fit most charging jacks. Fully approved.

Cat M-9617



Just slot the batteries in the quick charger, then plug the entire thing into any mains socket. This compact unit has no power cable... a three pin plug is built into the back of it. Charges 2 or 4 'AA' or 'AAA' NiCads or 1 or 2 x 9V cells. An indicator LED is provided for each compartment.

Cat M-9507

## 5 Hour Fast Charger

**\$22<sup>95</sup>**



**\$26<sup>95</sup>**

## For 'AA', 'AAA' & 9V! Charging Cabinet

Charges up to eight 'AA' or 'AAA' NiCads... or up to four of these plus two 9V cells. An economical charger that's ideal for the most common NiCad batteries. The slimline charger has an indicator LED for each compartment. Just plug it into the mains.

Cat M-9508 Batteries not included



## Battery Charger

Get the most out of your batteries with this Arlec 12V 4A battery charger! It features a battery condition analyser function and offers short circuit protection. It comes complete with a strong flame-retardant case.

Cat M-9805

**\$42<sup>95</sup>**

**ARLEC**



## Auto/Boost 6A Battery Charger

A rugged battery charger with an easy-to-read LED display, it's for 12 volt batteries used in cars, caravans and boats. It has an automatic charging mode to hold batteries to full charge and a condition analyser function. Excellent value for your money!

Cat M-9806

**ARLEC**

**\$69<sup>95</sup>**



## Ideal for alarm batteries! 12 Volt Battery Charger

A quality 12V charger from ARLEC. It delivers 500mA and, because it can be left running continuously, it's ideally suited for charging the sealed lead-acid and gel-cell type batteries used in burglar alarms. It is not suitable for batteries with a current capacity under 2.6Ah.

Cat M-9531

**\$36<sup>95</sup>**

## Recharge Batteries & Charger Pack

**\$34<sup>95</sup>**

**EVEREADY**



Batteries and charger in one pack! You get 4 of the popular 'AA' size NiCad batteries plus a matching plug-in type charger which will also charge 4 x 'AAA' size NiCad batteries. An indicator LED is also provided on this compact, quality unit.

Cat S-3178

See also page 150 for our range of Solar Battery Chargers.



# Power Supplies

## DC SUPPLIES

### 9V DC @ 200mA

An economical supply that's suitable for equipment which uses 9V DC or a 9V transistor type battery such as cassettes, transistor radios, etc. Simply plugs into the mains. Comes with 3.5mm plug (tip positive).

Cat M-9614 **\$14<sup>95</sup>**

### 9V DC @ 600mA

A high power, fixed voltage 9V supply suitable for equipment which needs that little extra... cassette recorders, etc. Supplied with multi-way output adaptor. Selectable polarity.

Cat M-9560 **\$32<sup>95</sup>**

### 12V DC @ 1 Amp

A high power supply in a compact plug-in style case that's ideal for a wide range of applications including alarm systems, intercoms, etc. Selectable polarity. Supplied with multi-way output adaptor.

Cat M-9670 **\$29<sup>95</sup>**

## AC SUPPLIES

### 12V AC @ 500mA

Used for a wide range of cordless phones and many other household appliances. Supplied with 2.1mm plug.

Cat M-9655 **\$24<sup>95</sup>**

### 16V AC @ 900mA

Ideal for alarm panels, small TV's, some answering machines, as a power supply for experimental work, etc. Comes without plug (output) so you can fit the one that is appropriate for the appliance.

Cat M-9667 **\$18<sup>95</sup>**

### 16V AC @ 1.5 Amp

A high power supply suitable for small TV's, keyboards, etc where power demands are heavy. It's double insulated for added safety. Supplied with 3.5mm plug.

Cat M-9668 **\$22<sup>95</sup>**

## COMMUNICATIONS SUPPLIES

### 13.8V @ 1.5A Regulated

A 13.8V @ 1.5A DC regulated supply with screw terminals for easy connection. Ideal for CB's, car stereos, small amateur transceivers (particularly handhelds), etc. Makes a great service supply as well.

Cat M-9545 **\$84<sup>95</sup>**

## MULTI-VOLTAGE SUPPLIES



### 3 - 6 - 9V DC @ 200mA

The battery eliminator allows you to select the three most common voltages used for low power, battery operated devices... such as portable radios, cassettes, etc. Supplied with multi-way output adaptor and has selectable polarity.

Cat M-9625 **\$21<sup>95</sup>**



### 3 - 4.5 - 6 - 7.5 - 9 - 12V DC @ 200mA (300mA max)

With six selectable voltages this is an extremely versatile supply for around the home, workshop, etc. Has selectable polarity and it's supplied with multi-way output adaptor.

Cat M-9626 **\$23<sup>95</sup>**

## Unregulated Power Supply

An unregulated power supply ideal for portable TV's, car radios, etc. It has a power rating of 13.8V DC at 1.5A. (18V max.)

Cat M-9544 **\$49<sup>95</sup>**

### 13.8V @ 4A Peak

Ideal for those high current, high peak demand applications. 3 amp continuous (or 4A continuous @ 75% duty cycle) and 8 amp instantaneous peak rating. Just the thing for 2m or small HF amateur transceivers, as a bench supply, or a supply for 'auto' equipment.

Cat M-9547 **\$120**

## VOLTAGE CONVERTERS

### Car voltage converter (DC/DC)

#### 3, 4.5, 6V @ 500mA

#### 7.5, 9, 12V @ 800mA

Simply plugs into the car cigarette lighter and allows you to switch voltages to run a large range of battery powered devices. Has selectable polarity and it's supplied with multi-way output adaptor.

Cat M-9684 **\$21<sup>95</sup>**

### 24/12V Converter

Gives 13.8V @ 2 amps DC continuously (8A surge rating) from a 24 volt supply. This sturdy regulated supply is ideal for running CB's, stereo systems, etc in trucks with 24 volt systems (some caravan parks also supply 24V). Suitable for in-dash or under-dash mounting.

Cat M-9810 **\$69<sup>95</sup>**

## INVERTERS

### 12-240V 200W Inverter

A compact, advanced power system providing 230V A.C from a 12V DC source. It will operate most low-powered, electrical equipment, including smaller televisions and VCRs, personal computers, small kitchen appliances and cam-corder and cellular phone chargers.

DC Input Voltage: 10.7-14.5V (12V nominal)  
AC Output Voltage: 230V RMS  
Output Frequency: 50Hz  
Output Power: 400W (surge), 200W (40 mins), 160W (continuous)

Weight: 1.1Kg  
Cat M-5010 **\$249**

### 12-240V 600W Inverter

Has Low Battery indicator, Overload indicator and protection, power indicator, electronic/temperature shutdown, low/high battery shutdown, 2 mains sockets and circuit breaker.

DC Input Voltage: 10.5 - 14.5 (12V nominal)  
AC Output Voltage: 240V RMS  
Output Frequency: 50Hz (+/- 1%)  
Output Power: 1500W (surge), 600W (20 minutes), 325W continuous  
Minimum Load: 7.5W  
Weight: 6kg

Cat M-5000 **\$399**



### 3 - 4.5 - 6 - 7.5 - 9 - 12V DC @ 500mA

High current DC supply suitable for devices which need more power such as battery powered TV's, toys, etc. Six voltage selection makes it ideal for a large range of products. It's supplied with multi-way output adaptor and has selectable polarity.

Cat M-9627 **\$27<sup>95</sup>**



### 3 - 6 - 9 - 12V DC @ 1 AMP

High output, heavy duty supply with four voltage selections to a maximum of 1 amp. Ideal for home alarms, intercoms or as an economical supply for the workshop, etc. Has overload protection and simple screw terminal connections.

Cat M-9630 **\$42<sup>95</sup>**

Need 115 Volts? See Page 59



## INDOOR ANTENNAS



### TV/FM Spiral Antenna

Ideal for VHF channels 2-11 in good reception areas or as an FM antenna for your tuner. Suitable for 300 ohm ribbon cable connection.  
Cat L-4010

**\$9<sup>95</sup>**



### Rabbit Ears

A reliable, economical alternative to an outdoor antenna. Ideal for VHF channels 2-11 in good reception areas. Comes with coax plug connection.  
Cat L-4015

**\$19<sup>95</sup>**



### High Quality Rabbit Ears

Modern, attractive styling and 180° rotation of the antennae for easy adjustment. A quality VHF/FM antenna for good reception areas or where outdoor systems are inappropriate.

Cat L-4011

**\$26<sup>95</sup>**



### Deluxe Indoor UHF/VHF Antenna

A superb indoor antenna with adjustable UHF dish and tuning knob.... it's also good for VHF and FM. Best suited for strong reception areas (metropolitan areas). Comes with coax cable and plug.

Cat L-4005

**\$29<sup>95</sup>**



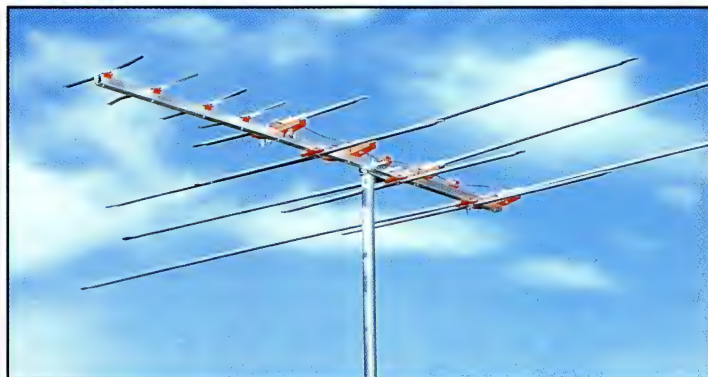
### Indoor TV Antenna With Amplifier

This clever antenna has separate elements for VHF and UHF - this allows you to adjust each of them independently for the best reception of that particular band. Its in-built signal amplifier makes receiving difficult stations a breeze! UHF channels 28-69, VHF channels 2-11.

Cat L-4009

**\$64<sup>95</sup>**

## COMBINED ANTENNAS



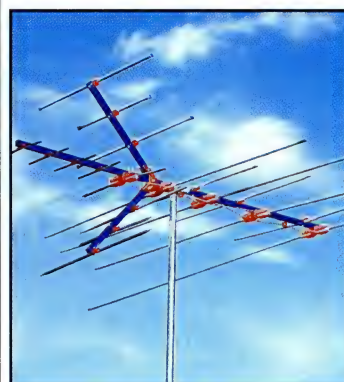
### Budget Combination UHF/VHF Antennas

Great low priced antennas that are ideal for metropolitan or good reception areas. Both have provision for either vertical or horizontal mounting and feature corrosion resistant construction for longer, trouble free life. L-4001 is a model specifically designed for those who wish to receive SBS, yet don't need UHF reception of the other channels. L-4001 is more general allowing you to receive VHF channels 2-11 and UHF channels 28-69.

Cat L-4000 — VHF channels 2-11/UHF 28-69

Cat L-4001 - VHF channels 2-11/UHF 28

**\$59<sup>95</sup>**



### Combined UHF/VHF Suburban

A superb antenna for suburban use (medium reception areas) with extra elements for higher gain on lower channels. The UHF section is tuned for channels 20-36, and the VHF for channels 2-11. Corner reflectors also help improve UHF performance. Can be vertically or horizontally mounted.

Cat L-4021

**\$119**



### Ideal for fringe areas! Top Performing UHF/VHF

High quality, high gain antenna particularly suited to outer metropolitan areas (fringe areas). Corner reflectors are provided for improved UHF performance. Receives UHF channels 20-36 and VHF channels 2-11. Suitable for installations with multiple TV connections. May be vertically or horizontally mounted.

Cat L-4051

**\$139**

### UHF TV

UHF TV is the new standard for TV throughout Australia. Chances are, it's already in your area. If you can't receive UHF you're missing out on the superior picture quality of UHF and a greater range of programs for all the family. To find out more about UHF TV, ring the Department OF Communications Hotline on (008) 07.7361, or ask at your local Dick Smith Electronics store. You should note that SBS reception is only available in metropolitan areas.

Made in Australia for Dick Smith Electronics by





# TV Antennas

## UHF ANTENNAS

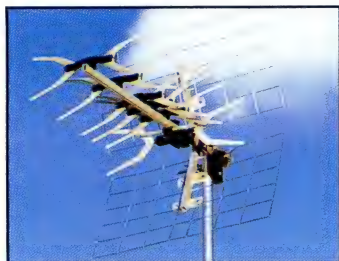


### Yagi-Style UHF TV Antenna To Suit Channels 28-69

If you live in an area with medium to good TV reception, this is the UHF antenna you need. It has two reflectors for improved reception, can be either horizontally or vertically mounted and features a long-lasting corrosion-resistant finish.

Cat L-4079

**\$56<sup>95</sup>**



### For medium signal areas! UHF Ch. 21-69

The latest 23 element design - it receives all UHF channels from 21 to 69. Provision is made so the antenna can be tilted where necessary. Easily mounted on any standard antenna mast. Includes balun for coax connection.

Cat L-4086

**\$69<sup>95</sup>**

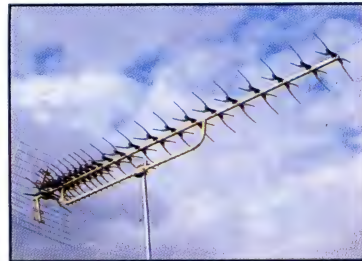


### Channels 21-69 Deluxe UHF

With 43 elements this antenna is best suited to medium reception areas. It's tuned for reception of channels 21-69. Comes complete with balun for coax connection and can be mounted vertically or horizontally.

Cat L-4084

**\$79<sup>95</sup>**



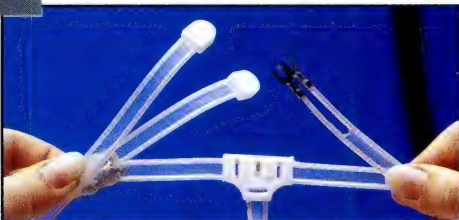
### For deep fringe areas! UHF Ch. 21-69

High quality antenna with 91 elements for superior deep fringe area reception on all UHF channels from 21-69. Comes with balun for coaxial cable connection. Suitable for mounting on any standard antenna mast.

Cat L-4088

**\$139**

## VHF ANTENNAS

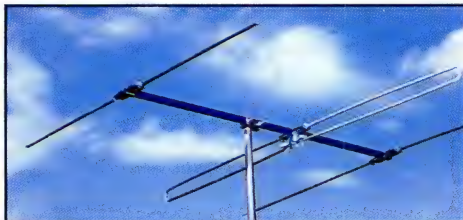


### Indoor FM Radio/TV Antenna

Great as an FM antenna for your tuner or even as a VHF TV antenna in prime reception areas. Simply find the best reception position, and stick it up with tacks or adhesive.

Cat L-4060

**\$3<sup>95</sup>**

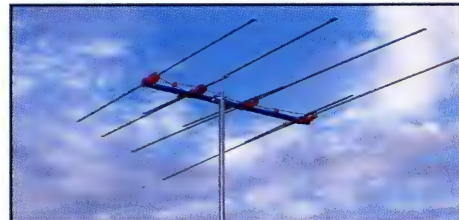


### Outdoor FM Radio Antenna

Gives great FM reception in city, town and metropolitan areas. It's easy to erect and has 300 ohm ribbon cable connections. Built to last.

Cat L-4064

**\$46<sup>95</sup>**



### VHF/FM Metropolitan

Suitable for medium signal or near fringe areas. Gives even response over VHF for channels 0-11 (ie. channels 2, 7, 9, & 10). Comes complete with mast clamps. Suitable for 300 ohm ribbon connection or coax (requires balun).

Cat L-4022

**\$69<sup>95</sup>**

## TV MASTHEAD AMPLIFIERS

\* dB Gain figures quoted are within a 10% + or Tolerance.



### UHF Masthead Amplifier With 2-Way Splitter

Ideal for home viewers who want good reception when operating multiple TVs from a single antenna. Channels 28-69 (UHF), 526-813 (UHF). Typical gain is 22dB (UHF). Signal/noise ratios: 8dB (UHF). In-built power supply: 240VAC 50MHz.

Cat L-4216

**\$69<sup>95</sup>**



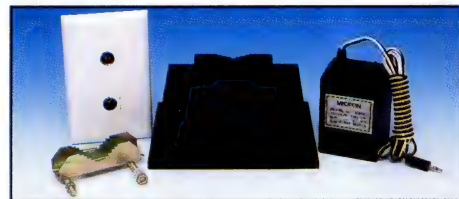
### UHF/VHF Masthead Amp

Quality Masthead Amplifier designed for VHF/FM/UHF channels. High gain with extremely low noise level. Comes with power supply and mast clamp.

- 45-230MHz, 470-890MHz bandwidth (VHF/FM/UHF)
- 30-35dB max. gain (45-230MHz, 470-700MHz) 28-34dB max. gain (700-890MHz)
- 75 ohm output, 75 & 300 ohm inputs
- Variable gain for best results in differing signal strength areas.
- Includes power supply

Cat L-4205

**\$89<sup>95</sup>**



### UHF Masthead Amp

An extremely stable, high gain masthead amplifier suitable for UHF TV channels. Comes complete with power supply, mast clamp and wall plate with plug/socket.

- 400-820MHz bandwidth (UHF TV, passes VHF signal)
- 20dB gain (max)
- 75 ohm input & input impedance (suits coax)
- <3dB noise figure
- Includes power supply

Cat L-4198

**\$119**

### Kingray Amplifiers

High quality Kingray masthead amplifiers are available for special areas. Ask at your local Dick Smith Electronics store.



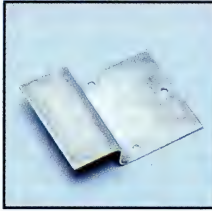
## ANTENNA MOUNTS

### Caravan Utility Bracket

Designed specially for mounting antennas to caravans, campers, etc. Ideal for use with our L-4055 caravan and boat TV antenna.

Cat L-4057

**\$4.50**



### Gutter Mount

Allows you to install your antenna on the guttering. Ideal for installations in flats, holiday houses, etc. Corrosion resistant finish.

Cat L-4056

**\$6.50**



### Wall Mounts

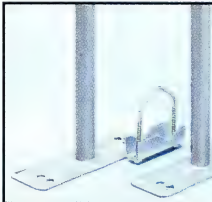
Used for holding masts off walls (or any vertical surface), past eaves, etc. Complete with saddle clamp assembly.

Cat L-4152

**\$9.95**

Cat L-4153

**\$10.95**



### Barge Mount

Designed to mount any TV antenna from a vertical surface, eg: barge board, wall, etc. 139cm long, it's powder coated against corrosion and pre-drilled.

Cat L-4150

**\$16.95**

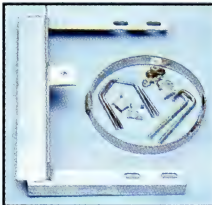


### Chimney Mount

Comes with everything you need to fit an antenna mast to a chimney. And it's coated to protect it against the elements.

Cat L-4154

**\$29.95**



## CLAMPS & TIES

### Nail-in Cable Clips

Ideal for running cables on walls, barge boards, skirting boards, etc. Available for both ribbon and coaxial cable.

Ribbon Type Cat L-4514

**85¢/ea**

Coax Type Cat L-4515

**15¢/ea**

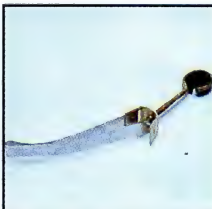


### Cable Stand-Off Assembly

Used for securing cable just off the mast to prevent interference from the mast itself. Suitable for coax and ribbon cable.

Cat L-4512

**\$1.95**



### Saddle Clamp

Designed for holding two pieces at right angles... eg: mast pipe to mount; antenna to mast. Galvanised for longer life.

Cat L-4165

**\$2.95**



## ANTENNA SPLITTERS

Used when one antenna is connected to multiple TV's, videos, etc (can sometimes be used in reverse). All are designed for indoor use.



### 4-Way Coax Splitter

75 Ohm splitter permits 4 outlets from one antenna. Can be used in reverse.

Cat L-4474

**\$7.95**



### 2-Way Coax Splitter

75 ohm splitter permits 2 outlets from one antenna. Covers 50-890MHz. Isolation 25dB. Insertion loss 3.5dB. Can be used in reverse.

Cat L-4472

**\$6.95**



### 2-Way Ribbon Splitter

300 ohm splitter permits 2 outlets with ribbon cable. Covers 50-890MHz. Can be used in reverse.

Cat L-4218

**\$7.95**



### 2-Way Plug Type Splitter

75 ohm splitter permits 2 outlets. Fitted with standard coaxial plugs and sockets so connection is simple.

Cat L-4270

**\$4.95**

## DIPLEXER

A diplexer accepts lead-ins from two antennas and combines them without the normal losses associated with couplers. The most common use is for connecting two antennas (UHF & VHF) to one TV/video.



### Masthead Diplexer

Housed in a weatherproof enclosure for masthead fixing with provision for 300 ohm or 75 ohm connections. Can be used indoors or outdoors.

Cat L-4469

**\$12.95**

## TV BALUNS



### A. Indoor/Outdoor Balun

For matching 75 ohm coaxial cable to 300 ohm ribbon terminals on your TV, tuner or antenna. It's weather resistant so can be used indoor or out.

Cat L-4465

**\$5.95**

### B. Universal Balun

With 300 ohm screw terminals and 75 ohm coaxial plug can be used either way around. For indoor use, it's ideal if you're sure which type of balun you require.

Cat L-4456

**\$3.95**

### C. Balun Socket

Simply fixes to the 300 ohm terminals on your TV, etc and converts it to a 75 ohm coaxial socket. Ideal for TV games on the old black & white set. Indoor use only.

Cat L-4454

**\$4.95**

## MAST PIPES

### A. Masthead Pipe

Standard 27.5mm diameter mast pipe. Galvanised.

Cat L-4156

**\$12.95**

### B. 4m Telescopic Masthead

A 2-part mast which can be extended to just over 4m. Galvanised with locking bolts and 27.5mm diameter top section.

Cat L-4157

**\$44.95**

### C. Vertical Stand-Off Mast

Allows you to change the mast plane for areas where standard antennas can't normally be used. Complete with saddle clamp.

Cat L-4170

**\$8.95**

### 6 Metre TV Leads

Handy 6 metre coaxial leads with female/ male plugs or male/male plugs. Ideal when moving your TV/ video from room to room.

Male/Male Cat L-4266

Female/Male Cat L-4268



## CABLES WITH CONNECTORS

### 10 Metre Outdoor Coax

10-metre coax cable comes with outdoor Balun and coax plug... already fitted. Simply connects straight onto your antenna and TV/video

Cat L-4466

**\$22.95**



## Looking For?

Antenna Cables: Page 187

Plugs & Sockets: Page 178

**\$7.95 ea**



## YOUR GUIDE TO TV ANTENNA SYSTEMS

You can save a great deal of money by installing your own TV antenna system. If you're handy with a hammer, and have basic hand-tools, you can have the average TV antenna system up and running in just a few hours. Before you start though, you'll need a basic understanding of the type of system that's appropriate for your area. Here are a few hints.....

### Different Types Of Antenna

Where you live, what stations are available and the geography of your immediate area all play a part in the antenna you choose. There are two major transmission bands used, VHF & UHF, each requires a different antenna.

#### VHF: Very High Frequency

VHF covers Channels 0 to 11. Until the mid 80's, all TV was broadcast on VHF. If you live in the city or metropolitan areas, you've most likely been watching TV on the VHF band. However, Federal Government policy is that all new TV stations are to broadcast on UHF.

#### UHF: Ultra High Frequency

UHF covers channels 28 to 69. As we said earlier, almost all new stations are assigned UHF channels. In country areas, UHF is fast becoming popular. However, even in the city areas, some stations broadcast on UHF as well as VHF, usually the UHF channel is used to cover an area where the VHF signal is very weak.

Sometimes you'll see a UHF antenna being described as Band 4 or Band 5, or even Band 4 & 5 UHF. This is simply the UHF band broken into two smaller bands. Band 4 covers channels 28 to 35, and Band 5 covers channels 39 to 69.

### What Is Gain?

'Gain' is simply a measure of how much signal the antenna will deliver, when compared to a theoretical reference antenna. It allows us to compare different antennas with each other. An antenna with a higher gain figure will deliver more signal. Gain is usually expressed in dB (decibels). If one antenna's gain is 3dB greater than another's, then it will deliver twice the signal power to the receiver.

In general, a higher gain antenna has greater directivity. This means that it receives signals better from one direction and rejects signals and noise from other directions. Because of this, high-gain antennas are useful in areas where signals are weak or where ghosting is a problem.

Is there any reason not to install a high-gain antenna? Apart from the fact that higher-gain antennas are more expensive, if one is used in an area having very high signal strength, the TV set can be overdriven, resulting in a degraded picture.

### Indoor Antennas

Indoor antennas are quite inexpensive and they can give acceptable reception. But keep in mind that reception conditions must be very good, ie: location relative to TV transmitters, lack of obstacles between you and the transmitter, etc. If you want the best reception possible in your location, it is fair to say that you should only install an indoor antenna, where installing an outdoor antenna is impractical.

### Which Antenna do you choose?

A simple and practical way to start is to look at your neighbours' antennas.....

What do they look like? How many cross elements do they have? Are they mounted on high masts? It will become obvious that one type of antenna is more common. Don't forget also, to choose an antenna that will receive the stations which are available to your area.

In most cases a combined UHF/VHF antenna is the best choice for those areas which receive both UHF & VHF. If only one band is available (UHF or VHF), then that's what you'll need. If, for instance, UHF became available in your area and your existing VHF antenna was adequate, you could install a separate UHF antenna on the same mast. There are also some areas where both UHF and VHF are available, but separate antennas are best because of the position of the TV transmitters.

### Antenna Cable

#### 1. Ribbon Cable (300 Ohm) Cat W-2070

Ribbon cable is inexpensive and can exhibit less loss than coaxial cable. However, as it is not shielded, it is prone to interference - this can be overcome by keeping it clear of conductors such as the antenna mast, guttering, metal roof cladding, etc. If you apply a gentle twist to the cable as it comes down the mast, keeping it away from the mast with cable stand-offs, this will also help reduce or eliminate interference.

#### 2. Coaxial Cable (75 Ohm) Cat W-2082

This is the best cable to use as it is shielded and less prone to interference. It is better during wet conditions, and more durable, than ribbon cable. It's also easier to install than ribbon as it does not require as much fixing. Coax is far better for permanent installations as it can be installed in wall cavities, etc. You should use a good quality coax with a foam plastic for the dielectric, or better still, one with a cellular dielectric known as 'semi-air-space'. See our cables section on pages 186 & 187

### Balun

A balun is a small RF (Radio Frequency) transformer. It's simply a device that allows you to convert a ribbon cable type connection to coaxial cable connection or visa versa. Both indoor and outdoor baluns are available.

### Masthead Amplifiers

Where the signal strength is weak or where long antenna cable runs are required, a masthead amplifier can mean the difference between a good picture and a fair picture. It cannot improve the quality of the received signal from an inadequate antenna, however it can help where the signal is marginal and requires a tall mast pipe and long cable runs. A masthead amplifier, in conjunction with a splitter, can also improve a system which has more than one TV/VCR on a single antenna.

### Splitter/Diplexer

A splitter is a small device which allows you to connect two or more TVs/VCRs to one antenna.

A diplexer works in the opposite way to a splitter and allows the connection of two antennas to one TV/VCR.

## Mains Power Accessories

Note: All timers are recommended for Indoor Use Only!



### 24-Hour Timer Switch

A thousand and one uses around the home and office! Just plug it into the mains socket and set it to turn appliances 'on' or 'off', up to 24 times in one day. Comes complete with 8 timer pins allowing 4 on/off programs. Extra pins are available.

Cat M-7200

**\$26<sup>95</sup>**



### 7-Day Timer Switch

Allows you to automatically switch appliances on/off up to 42 times in any seven days! Comes complete with 16 pins allowing 8 on/off programs. Extra pins are available. With manual override. It's ideal for switching the pool filter.

Cat M-7202

**\$29<sup>95</sup>**



### 96 switchings in 24 hours! Multi-Timer II

The Multi-Timer 2 allows an incredible 48 'on' and 48 'off' switchings (15 minute intervals) over 24 hours. There are no switch pins to buy... Everything's built in! It's easy to set and has manual override.

Cat M-7204

**\$39<sup>95</sup>**



### Digital Timer 5 programs!

A highly accurate timer switch with 5 switching programs available... 24 hour, 7 day, 6 day, weekend & weekday! You can set switching at any time interval, up to 12 switchings per program. With backlit LCD display, rechargeable battery back-up and manual override.

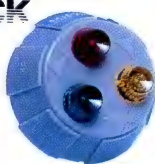
Cat M-7206

**\$56<sup>95</sup>**

### Power Point Safety Tester click

Just pop it into the power point and the light pattern reveals any faults.... without the danger of shorts or accidents! 240V.

**\$9<sup>95</sup>**



Cat M-7103

### Little Light Night Light click

Great for the children's room as a reassuring 'soft glow' night light, as a light to find power points in the dark or as a way of testing to see if extension leads have power. Also has 240V outlet.

Cat M-7255

**\$5<sup>95</sup>**



### Safety Plugs

A great idea to keep children out of trouble. These Safety Plugs are made of plastic and simply plug into the powerpoint when not in use. In handy pack of 6.

**\$4<sup>95</sup>/pk**

Cat M-7252





## POWER BOARDS

From 4 to 12 outlets from just one power point! All come with fitted cord and plug and are rated at 10 amps, 2400 watts.

### 12-Way Power Board

With overload protection and 1 metre cord.

Cat M-7120 **\$42<sup>95</sup>**

### 8-Way Power Board

With overload protection and 1 metre cord.

Cat M-7118 **\$27<sup>95</sup>**

## SURGE PROTECTION

### Protection For Your Computer

Very high quality protection for your computer, hi-fi, etc. Rated at 10 amps with an overload factor x10 (1 sec) and providing up to 40dB attenuation. Peak surge current (8/20uS) - 4500A. Bandwidth 100kHz - 4Mhz.

Cat M-7185

**\$199**



### With mains filter! 4-Way Adaptor

Also has spike & surge protection! Particularly suited to audio equipment where noise can cause problems. Plugs into the mains and gives you 4 protected and filtered outlets.

Cat M-7174 **\$89<sup>95</sup>** 

### Surge Protection

Although most electrical appliances are fitted with power supplies capable of standing up to some power spikes and surges, you can't always rely on them to provide adequate protection. Surges are caused by anything from lightning to electrostatic discharges from synthetic carpet and can result in equipment failure, sometimes completely destroying your appliances. While it is relatively expensive to get your appliances repaired, if you had surge protection the only cost you'd have to cover in the event of a surge would be that of a new protector. That's why we recommend you seek a higher level of protection, from surge protectors, so you can be assured that your electrical appliances won't fall victim to unexpected power difficulties.



## TRAVEL ADAPTORS

### A. Multi Reverse Adaptor

Converts USA, Japan, Europe, Great Britain, and many other mains plugs to the Australian system. Earthed for safety. Does not convert voltage!

Cat M-7302 **\$9<sup>95</sup>**

### B. Aussie To UK

Converts Australian mains plug to fit UK, Ireland, Singapore, Hong Kong, parts of the Middle East, Africa, etc. Does not convert voltage!

Cat M-7312 **\$7<sup>95</sup>**

### 6-Way Power Board

With overload protection and 1 metre cord.

Cat M-7116 **\$19<sup>95</sup>**

### 4-Way Switched

A separate switch for each outlet. 1.9 metre cord.

Cat M-7130 **\$44<sup>95</sup>**

### 4-Way Power Board

With overload protection and 1 metre cord.

Cat M-7114 **\$14<sup>95</sup>**

### Surge Guard

Single point protection for spikes and surges. Simply plug it into the mains socket, then plug the device to be protected into it.

Cat M-7150

**\$26<sup>95</sup>** 

### 2-Way Surge Protection

Protect up to two devices with this bargain price surge/spike filter from HPM.

Cat M-7153

**\$29<sup>95</sup>** 

### Surgebusters

Inexpensive protection against harmful electrical spikes and surges. Perfect for hi-fi, computers, and appliances with electric motors. Click Surgebusters come with \$5000 free insurance for two years. If the Surgebuster fails to protect your appliances, you will be reimbursed for damage.

### Junior Surgebuster (Single Outlet)

Cat M-7152 **\$29<sup>95</sup>**

### 6-Way Surgebuster

Cat M-7156

**\$59.95**



## DOUBLE ADAPTORS

### Standard Double Adaptor

Fits any standard wall socket. White in colour.

Cat M-7100 **\$3<sup>50</sup>**



### Space Saver Double Adaptors

Modern and attractive! Fits neatly against the wall and holds both plugs perpendicular to the wall surface - so they don't slip out!

Left side. Single Cat M-7101 **\$3.95**

Right Side Single Cat M-7102 **\$3.95**

Left & Right Twin Pk. Cat M-7104 **\$7.95**

## EXTENSION LEADS



### Standard Extension Leads

Quality extension leads fitted with plug and socket. All are rated at 240V 10A.

3 Metre Beige Cat M-7073 **\$5.95**

5 Metre Beige Cat M-7074 **\$7.95**

10 Metre Beige Cat M-7078 **\$12.95**

### Piggy

### Back Extension Leads



Fully approved 240 volt 10A extension leads fitted with a socket on one end and a piggy back double adaptor plug on the other.

1 Metre Cat M-7080 **\$5.95**

2 Metre Cat M-7081 **\$6.95**


4 Metre Cat M-7082 **\$9.95**

6 Metre Cat M-7083 **\$11.95**



### 2-outlet 1.8m Extension Lead

With convenient hanger hole.

Cat M-7070 **\$12<sup>95</sup>** 

## Cord Winder

Cat M-7092

**\$24<sup>95</sup>**



Cord Winder has a 11.5m cable handy with two power outlets in one unit. Includes in-built 10A circuit breaker.

## Safety Switches

Ideal for toasters, kettles, power tools or hairdryers. These safety switches prevent electrocution by automatically cutting off power from your appliances within 30 milliseconds.

Unit that wires to existing cord.

Cat M-7291

**\$29<sup>95</sup>**

Simply plugs in.

Cat M-7292

**\$39<sup>95</sup>**



## Fuse Wire Handy pack!

Keep one in the fuse box in case of emergency! Card has 8, 16, 20 and 30 amp wire.

Cat W-3180 **\$1<sup>95</sup>/pk**

## Circuit Breakers

No wire to change! Just slip them in place of your old fuse. If the circuit is tripped all you do is push the button to restore power.

8 amp Cat M-7282

16 amp Cat M-7284

20 amp Cat M-7286

32 amp Cat M-7288

**\$12<sup>95</sup> ea**



## Set And Forget Timer

This timer is perfect for clothes irons, electric blankets, heaters, stereos and other 240V appliances. Cut-off time is adjustable between approximately two minutes to two hours.

Cat M-7208

**\$34<sup>95</sup>** 



## Step-Down Transformers

### 240-115V Mains Power

High-quality 115V AC stepdown transformer perfect for audio, computer, laboratory or any other equipment that doesn't require more than 65-watt (0.57A) capacity. Comes complete with convenient carry-handle and non-slip feet.

Cat M-1151

**\$99**

### 240-115V Transformer

For more heavy-duty applications, this transformer has 2.17A (250W) capacity. It is particularly suitable for personal computers, small sound systems and other appliances that require higher power. Includes non-slip feet and carry-handle.

Cat M-1152

**\$169**







## Big Protection on a Small Budget! Affordable Home Security System

You don't have to spend a fortune to protect your home! Security is yours with this affordable system - it covers the average home and can be easily upgraded to suit your future requirements. It's activated by an easy-to-operate single key, includes a passive infrared sensor (PIR) for area surveillance, five pairs of magnetic switches for use on doors and windows, plus a panic button that trips the alarm instantly, an external horn siren and plug in power supply. You can install it yourself using the easy to follow, step-by-step instructions supplied.

### Features:

- High-quality 3-sector alarm panel
- Easy-to use 1-key activation
- Passive infrared area sensor
- 5 pairs of magnetic switches for windows and doors
- Panic button and mains power adaptor
- Comprehensive, step-by-step installation instructions

**NEW 93**

Cat L-5142 **\$229**

## Professional quality security system! The Complete Home Security Pack

The Complete Home Security Pack gives you professional quality home security in one pack! It comes with everything you need to protect your home and belongings. What's more, you get easy to read instructions which make installation a breeze. You won't find a better value or more complete package at the price!



### You get -

- Quality 4 sector controller
- Two passive infrared detectors
- Two magnetic reed switches
- Emergency button
- High pitched internal siren
- External horn speaker & cover
- Flashing strobe
- 100 metres of cable
- Battery & mains power plug pack
- Deterrent stickers and instructions

Cat L-5150 **\$599**

## 3-Sector Alarm Panel

A versatile and inexpensive control panel with three individually controlled alarm sectors. It's ideal for most domestic and small commercial installations. Keypad entry (arm/disarm) allows you to set your

own security code and there's also adjustable entry delay. With provision for up to two horn speakers, smoke detectors and panic button as well as perimeter and area sensors, it has tamper protection and comes with comprehensive fitting instructions. Requires 12-16V DC @ 1A power supply.

Cat L-5143 **\$99**



## With Step-By-Step Installation Instructions!

## Deluxe Home Security System

All the features of the economy system above plus much more! It uses a four-digit code to control the system, so you don't have to carry a key. Its control panel has four user-selectable sectors, allowing you to disable the alarm in any area of your home while leaving the other sectors armed. For example, you can turn off the alarm in your lounge room, yet ensure your kitchen, bedrooms, laundry and bathroom are still protected. Indicators on the alarm panel show you the status of any of the four sectors at a glance! It comes with everything you need to protect your home and belongings. You won't find a more complete package at this price!

### You get:

- Top-quality controller with four independently-activated sectors
- Comprehensive, step-by-step instructions
- Passive infrared area sensor
- Three magnetic (reed) switches for windows and doors
- Emergency "panic" button
- Mains power plug pack

Cat L-5141 **\$299**



## Australian Design & Manufacture!

## 4-Sector Alarm Panel

Multiguard 4 is a truly professional quality alarm panel that's suitable for the home or commercial premises. It's designed for maximum flexibility and ease of operation. With 4 individually controllable sectors; home and away capability so you can leave perimeter sensors, etc 'on' while you're at home; audible entry/exit warning; 24 hour fire/smoke detector sector; optional battery back-up; full led status report and more. Comes with mains adaptor and instructions.

Cat L-5145 **\$199**



## Door Stopper Alarm

Cat L-5159

**\$9<sup>95</sup>**



What a great idea.... you can take it anywhere! The Door Stopper alarm simply wedges under the door and if the door is opened... it sets off the alarm. Ideal for the home, flat, hotel, office, etc. Can also be used on poisons cupboards, etc. Requires 2 x AA batteries.



**Affordable protection  
Bargain  
Smoke  
Detector**

Cat L-5116

**Unbeatable Value**

**\$14<sup>95</sup>**

Each year, countless lives are lost unnecessarily in domestic fires. Yet, just two of these inexpensive smoke detectors in the average sized home could save its most priceless possession... a life. This bargain priced smoke detector senses smoke early and sounds the alarm, giving you valuable time to escape. 9V battery included



**A Great Idea!  
Sport Guard  
Motion  
Detector**

**NEW '93**

**\$19<sup>95</sup>**

Cat L-5161

An ingenious way to safeguard your belongings! Sometimes beach bags, luggage and expensive sports equipment can 'vanish' if left unattended. This clever alarm triggers automatically when the object it's attached to is moved. With LED flashing light, loud alarm and personal security code.



**With test button  
Smoke  
Detector**

Cat L-5118

**\$19<sup>95</sup>**

A highly sensitive smoke alarm which has a loud 85 decibel alarm. Comes with a handy test button and it also beeps to tell you when the battery needs replacing. 9V battery included



**NEW '93**

**Three-In-One!  
Magnetic  
Switch Mini  
Alarm**

Cat L-5186

**\$24<sup>95</sup>**

A high quality alarm for the protection of up to 3 points, with a distinct sound for each. You'll feel safe with this alarm installed on windows, doors, drawers or any area requiring protection! Batteries included.

**NEW '93**



**With Mounting  
Bracket!  
Portable  
Infrared  
Alarm/  
Doorbell**

Cat L-5041

**\$39<sup>95</sup>**

A desk/wall mountable, battery operated, infrared motion detector. Set it on alarm to deter intruders or door-chime to welcome guests. With a 120° range. Requires 3 x AA batteries.



**No Wiring Required!  
Motion  
Activated  
Security  
Alarm**

Cat L-5042

**\$59<sup>95</sup>** **NEW '93**

A quality infrared alarm with time-delay and programmable security code. It detects motion up to 60ft away in a 110° arc and has a deafening 110db alarm. Requires 1 x 9V battery.



**Automatic  
Security  
Light**

Cat L-5335

**\$39<sup>95</sup>**

Just the thing for entry-ways, over garage doors, around swimming pools, driveways, etc. It uses an infrared detector to detect movement, automatically switching the floodlights on when the surveillance field is broken. With 'white light rejection' it won't false alarm when an external light source overlaps the sensor path. It has an 80 x 40ft (L x W) sensor range and adjustable time delay. Floodlight globes not included.



**Halogen  
PIR Light  
Control**

Cat L-5339

**\$69<sup>95</sup>**

A quality infrared detector and energy saving light which acts as a courtesy light for guests or a security light. It's easy to install, comes in a sturdy weather proof housing and has a built-in photo electric cell, so it only works at night. The PIR detector has a 110° coverage area and range of 13m. Both light and detector positions are adjustable and the light can be set to stay on for 5 seconds or up to 12 minutes.

## You're Safe And Secure With A Padlock By **ARLEC**

Choose from a wide range of sizes in either brass or steel. Ideal for use on gates, sheds, in fact, any place you want to keep anything secure.



Brass 20mm

Cat L 8001

**\$3<sup>95</sup>**



Brass 30mm

Cat L 8003

**\$4<sup>95</sup>**



Steel 40mm

Cat L 8104

**\$8<sup>95</sup>**



Steel 50mm

Cat L 8105

**\$11<sup>95</sup>**



Brass 25mm

Cat L-8002

**\$4<sup>25</sup>**



Steel 30mm

Cat L 8103

**\$6<sup>95</sup>**



Brass 50mm

Cat L 8005

**\$10<sup>95</sup>**



Brass  
2 x 40mm

Cat L 8006

**\$14<sup>95</sup>**

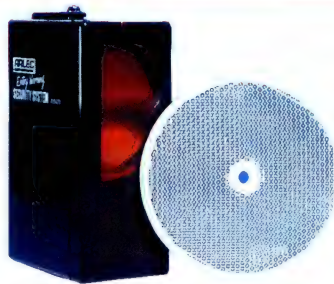


# Security Accessories

## Great as a door-minder! Infrared Beam Sensor

Ideal for security or as a door-minder or people counter! It's simply an infrared transmitter/receiver mounted in one unit and it comes with a reflector. Just mount the transmitter opposite the reflector and wire it to the electronic buzzer. It has a range of up to 8m and comes with mains plug adaptor and 20 metres of cable fitted with an electronic buzzer.

Cat L-5051 **\$189**



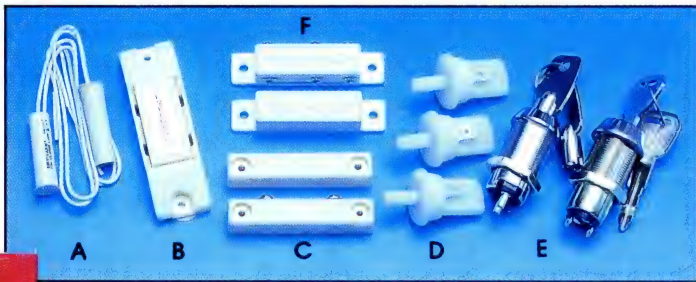
## Digital Access Keypad

A digital keypad with raised keys that can be fitted to alarm systems, security door applications, etc. It comes with a mounting block and it's finished in brushed stainless steel... so it looks great. It's fitted with a tamper switch for added security.

Cat L-5284  
**\$49<sup>95</sup>**



## Alarm Switches



### A. Concealed Magnetic Switch

Ideal for wood doors, windows, etc where they can be recessed making them undetectable. Suitable for any alarm with an N.C. circuit.

Cat L-5212 **\$5<sup>95</sup>**

### B. Emergency Button

Ideal under the shop counter or for people who live alone, etc. Designed to instantly trip the alarm when it's pressed.

Cat L-5285 **\$3<sup>95</sup>**

### C. Surface Mount Magnetic

These are the ones you most often see on windows and doors. In plastic case for easy mounting. They can be wired to any alarm with an N.C. circuit.

Cat L-5210 **\$4<sup>25</sup>**

### D. Alarm Tamper Switch

Ideal for protecting alarm panels and siren covers - it detects if they've been tampered with and triggers the alarm. Can be mounted to most alarm systems on a normally-closed circuit.

Cat L-5286 **\$2<sup>95</sup>**

### E. Barrel Switches

For switching home and car alarms. Now also available with tubular keys for added security. Includes two keys. Large Standard Cat L-5290 **\$9.95**  
Mini Standard Cat L-5295 **\$9.95**  
Large Tubular Cat L-5291 **\$12.95**  
Mini Tubular Cat L-5296 **\$10.95**

### F. Reed Switch

With both N.O. and N.C. contacts. For easy mounting, it is encased and double-sided tape and screws are provided.

Cat L-5211 **\$5<sup>95</sup>**



## External Piezo Alarms

Save space with these high pitched piezo alarms. Can be used for home or for car alarms, etc. Two sizes to choose from, both operate on 12 volts and have adjustable bracket.

**Small**  
Output: 100dB SPL @ 1m  
Rated: 250mA (max) @ 12V DC

Cat L-7029 **\$19<sup>95</sup>**

**Large**  
Output: 110dB SPL @ 1m  
Rated: 500mA (max) @ 12V DC

Cat L-7030 **\$26<sup>95</sup>**



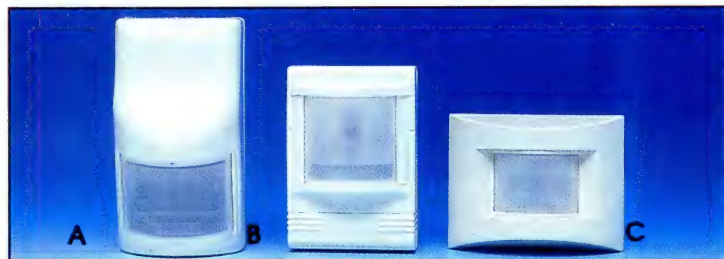
## Indoor Sirens

Ideal as a local warning device either to alert to a security breach or to frighten off an intruder.

**Round 85mm(diam.) x 43mm**  
Output: 105dB SPL @ 1m  
Rated: 7.5-15V (200mA @ 12V)  
Cat L-7025 **\$21<sup>95</sup>**

**Square 105 x 105 x 33mm**  
Output: 110dB SPL  
Rated: 6-15V DC  
Cat L-7032 **\$21<sup>95</sup>**

## Motion Detectors



### Quality Plus!

### A. NESS 'Ten' Passive Infrared Detector

Australian made, super small and beautifully styled! The NESS 'Ten' PIR can be mounted on the wall, ceiling or in the corner and because of the size, it's unobtrusive. It covers an arc of 100° with an adjustable range of up to 15 metres. It requires a supply of 9-16V, is easily fitted to most alarm systems and has tamper protection.

### Outstanding performance!

### B. Jaguar 3-Pulse PIR

The Jaguar is the latest in passive infrared detection with 3-pulse technology for more reliable protection. Gives 140° coverage with an adjustable range up to 12 metres which makes it ideal for large area protection in rooms, hallways, etc. Comes with tamper protection. Can be mounted on walls, in corners, etc and is easily wired into virtually any alarm system. Operates from 9 - 16 volts DC.

### C. Bargain Motion Detector

It's tiny! A highly sensitive infrared motion detector which can be wall, ceiling or corner mounted. It utilizes two pulse technology for greater accuracy and fewer false alarms. Can protect an area 12m x 12m with 110° coverage. Has tamper protection and operates on 12V DC. It's suitable for most alarm systems.

Cat L-5004 **\$89<sup>95</sup>**  
Cat L-5005 **\$69<sup>95</sup>**



## Siren Speaker

Speaker horn with inbuilt driver which can be mounted externally (under eaves, etc). This is the one that makes all the big noises to attract attention. 12 Volt operation. Suits most alarm systems.

## Horn Cover

A heavy duty steel cover complete with tamper switch. Protects the siren horn from the elements and prevents anyone disabling it. With tamper protection.

Cat L-7026 **\$34<sup>95</sup>**  
Cat L-5300 **\$29<sup>95</sup>**



## Strobe Lights

Bright flashing lights which can be mounted outside (under eaves, etc). When the alarm system is triggered it becomes instantly obvious where the alarm is coming from. 12V DC operation fits suit most alarm systems. 95mm diameter.

**Blue** Cat L-6000

**Red** Cat L-6004

**Amber** Cat L-6006

**Mini Strobe:** Blue 65mm Diam.

Cat L-6002 **\$34<sup>95</sup>**



## Window Sticker

Self adhesive sticker fixes inside window. 130mm X 60mm

Cat L-5311 **\$2<sup>25</sup>**

## Deterrent Sign

Aluminium security deterrent sign. 245mm x 270mm approximately.

Cat L-5312 **\$9<sup>95</sup>**



## Pressure Mat

Almost impossible to detect under carpets, rugs etc. When an intruder steps on it, it triggers the alarm. Also great as a customer warning in shops, etc. N.O. contacts, suits most systems.

Cat L-5270 **\$24<sup>95</sup>**

**Piezo Buzzers...**

See Page 165.



## Includes Professional Installation!

That's right! Purchase any of the incredible Mongoose car alarms and installation is included. You can rest assured that your car alarm has been installed correctly by a qualified professional. What's more, you'll get a full Three Year Guarantee! (installation may not be available in some areas. Please check with your local store).




### M400 Remote Car Alarm

A superb alarm that comes with two remote controllers, bonnet/boot/door protection, a flashing warning light, siren and automatic reset. It's an instantaneous alarm that will also detect car movement, so the alarm will trigger if anyone attempts to remove the tires or tow your car away. There's also an intrusion alert that tells you if the alarm has been triggered. Comes with window warning stickers and includes full installation.

**\$289**

Cat L-5400



### M1000 Anti-Theft Device

Your neighbours will love you for taking this common-sense approach to car security. The M1000, unlike a standard alarm, can't go off making a racket in the middle of the night. Instead of shouting and screaming, it simply disables your vehicle's engine! Advanced features also include: Smart power-up to activate the alarm if the power or earth is removed and blinker-light confirmation. What's more, if your vehicle has central door locking, it can be connected to operate when you switch the alarm. Comes with warning light, window stickers and includes installation.

**\$399**

Cat L-5401



### M1200S High Security Car Alarm

The ultimate remote car alarm system with virtually everything imaginable. Top-of-the-line features include: Engine disable, boot/ bonnet/ door protection, motion detection, automatic reset, power and earth detection, battery back up for the siren, blinker confirmation, the convenience of boot by-pass and more. It can be hooked up to your central locking system and includes programmable automatic arming which switches the alarm on 30 seconds after the last door is closed. Price includes professional installation.

**\$599**

Cat L-5402



### Car Alarm Stickers

Lets them know you've fitted an alarm before they do any damage to your car. These stickers can be a great deterrent, they simply fit the inside of the window.

**\$1<sup>95</sup>**

Cat L-5310



### Yellow Warning Light

The flashing light looks like an alarm 'on' light and can act as a deterrent. It's easy to fit and effective.

**\$18<sup>95</sup>**

Cat L-5321



### Red Deterrent Light

Ideal as a replacement light for your existing alarm or it can be wired to the ignition as a deterrent to thieves.

**\$12<sup>95</sup>**

Cat L-5080



### Deluxe Door Switches

Plastic shaft car door switches that are adjustable in length for professional installation. In packs of two.

**\$10<sup>95</sup>/pr.**

Cat L-5079



### Door/Boot/Bonnet Switches

Of solid metal construction, these switches are easy to fit and can be installed with any car alarm. In packs of two.

**\$3<sup>95</sup>/pr.**

Cat L-5256

## Personal Alarms

### Personal Screech Alarm

A great idea! It's about the size of a lipstick case, so it's no trouble to carry around. When you push the button the alarm is activated by compressed gas. It's incredibly loud (115 decibels) which is certain to send anyone running. What's more, it's good for about eighty bursts, so it'll last for a long time.

**\$19<sup>95</sup>**

Cat L-5163



### Personal Defender Alarm

A great security device that acts as a personal alarm and doubles as a door alarm. It's about the size of a small pager and can clip to your pocket or belt. Features a super loud 130 decibel piezo siren that will run continuously for up to two hours (or until the pin is replaced). Can also be used in the home as a doorchain style alarm. Comes complete with mounting bracket. Supplied with 9V battery (already installed) and carries a 12 month warranty.

**\$59<sup>95</sup>**

Cat L-5162



### My Personal Alarm



A bargain price for a personal alarm that you can carry in your purse, pocket or glove box! It's bright and colourful and emits a loud 110dB alarm when the activating cord is pulled. Requires 2 x AA batteries.

**\$10<sup>95</sup>**

Cat L-5152

### 2-In-1 Torch/Alarm

A fantastic personal alarm that also doubles as a handy flashlight! It fits in the purse, pocket or car glove box!



You simply push the switch forward to use the torch, or backward for an ear-piercing alarm. Requires 2 x AA batteries and a 9V battery.

**\$12<sup>95</sup>**

Cat L-5153



### It's triggered automatically! Body Guard

A personal alarm and handy key light in one! Simply slip the wrist-strap on and put Body

Guard in your purse, etc. If the cord is pulled by someone trying to snatch your bag the alarm is triggered. Requires 2 x AAA batteries.

**\$16<sup>95</sup>**

Cat L-5154



## It's The No Risk Way Into Computing!

**DICK SMITH**  
ELECTRONICS

### Computer **EASY**

#### CUSTOMER CARE PLAN Buy Your Computer From Us And Receive All These Benefits:



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See pages 4 & 5 for the location  
of your nearest store.

**IBM**

Lotus

**OSX**

**OKI**

**Commodore**

**EPSON**

**AVTEK**  
DATA COMMUNICATIONS

**CITIZEN**

**Microsoft**

**Star**



# Make your computer purchase a **No Risk** decision

Many companies are quite happy to sell you a computer and software and, as soon as they have your money, leave you to fend for yourself. But not us. For 25 years, we've offered top brands at competitive prices plus a level of customer support and service that's second to none.

At Dick Smith Electronics, we believe every one of our customers should get the maximum possible value from their computer purchase. That's why we've created the Computer Easy Customer Care Plan<sup>†</sup>. It provides every computer purchaser with:

**FREE**

## Installation

Your computer can be set up, and all operating system software installed **FREE** of charge, at your home or office by experienced technicians.\*

## On-Site Service Warranty

**FREE**

There's nothing worse than having to dismantle and transport your computer system when it requires servicing. Our **FREE** 12-month on-site warranty means you need only make one phone call to arrange servicing in your own home or office.\*\*

**FREE**

## Training

Computer training courses are generally quite expensive, which is one of the reasons why our **FREE** three-hour "Basic Introduction To Computers" course is so valuable - especially to first-time computer users! Even if you have computer experience, there's no telling what new tricks you might pick up!

## VIP Club Membership

**FREE**

One of the most exciting elements of the Computer Easy Customer Service Plan is our VIP Club, providing advice, access to software, a newsletter and special offers and giveaways that are exclusive to Dick Smith Electronics computer purchasers.

## Special Offers to Members

**FREE**

For example, along with their VIP membership card, new members are offered a computer modem and software at a special members-only price. In addition, periodically, members will receive the VIP Club Newsletter plus special offers and giveaways that are only available to VIP Club members.

## Computer Help Line

**FREE**

When you're starting out in computing (or just learning a new program), everybody needs some friendly advice once in a while. Our **FREE** computer help line means an answer to your question is only ever a phone call away.

## Access To The Dick Smith Electronics Computer Bulletin Board

There are thousands of public domain and shareware programs (over 600 megabytes at last count) freely available to VIP Computer Club members via the Dick Smith Electronics Computer Bulletin Board.

## Money-Back Guarantee

If, for any reason, you're not satisfied with your computer, simply return it to us within 7 days (in original condition and in its original carton). We'll happily exchange it or return your money, less transportation costs.\*\*\*

\* Free on-site installation is limited to 30 minutes duration and only purchasers situated within 50km of a Dick Smith Electronics company-owned store. Additional travelling and installation time will be charged for accordingly. Applies only to "stand-alone" computer systems (commercial network installation can be negotiated separately).

\*\*Warranty period applies from date of purchase. Free on-site service limited to within 50km of a Dick Smith Electronics company-owned store. Additional travelling time will be charged for accordingly.

\*\*\*Goods returned to us must be unmarked and in the exact condition supplied. You must also include all sales dockets and when you return the goods.

Address Line & Phone Numbers.

† The Computer Easy Customer Care Plan applies solely to IBM, Commodore and DSX computers. Conditions apply - may not be available in some country areas.



## Computer Systems

### The Best Brands, The Best Choice

We carry three major computer brands, each offering different benefits to the consumer. One thing they all have in common is that they are supported by our exclusive Computer Easy Customer Care Plan (as detailed on the preceding pages of this catalogue).

#### IBM Computers



By far the best-known and most revered name in computing, IBM originated much of the computing technology other makers sell today. Their computer systems remain the first choice of quality-conscious individuals and businesses world-wide because of their commitment to the highest standards in both system construction and customer support.

#### Commodore

The company that brought computers into the home with their revolutionary Commodore 64 in the late seventies and early eighties has moved into IBM-

compatible computing with a vengeance! Their range of systems are carefully tailored to provide the optimum combination of high performance and affordable price. Their commitment to the Australian market is evidenced by their comprehensive local technical facilities.



#### DSX



Proof that a product doesn't have to be world-famous to be high-quality, our DSX range of computers boasts extensive quality-control testing before sale, proven construction and components, all contained in truly state-of-the-art designs. They provide a great opportunity for purchasers who have no particular brand preference to source a quality system at a very affordable price.



#### Computer Support Hotline

When you purchase a computer system or related equipment from Dick Smith Electronics, you are entitled (at no extra cost) to free advice from the experts who man our Customer Support Hotline. Simply call them with your problem or query and they'll do their best to supply you with a solution.

**(02) 888 2002 Mon-Fri 9am to 5pm EST**

#### Business Computer Solutions?

Whether it's one or a hundred PCs, we can tailor a system to your needs and budget. We specialise in IBM compatible PC-based systems, whether networked or stand-alone. From software selection, right through cabling, hardware installation, training and after-sales support, we can arrange it all. Our unmatched buying power in hardware and software means we can source and supply at prices far below those of our competitors. Call us now on any of the numbers below for an obligation-free quote.

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**Fax:** (02) 805 1986  
**Melbourne Office:**  
**Phone** (03) 428 0140  
**Fax:** (03) 428 0139



## What Is Multimedia?

Multimedia is the most exciting thing to happen to computers in years. It's the integration of high quality sound (it can even be in stereo), photographic quality images, animation, text and graphics. Computer programs, games, instruction manuals, encyclopaedias, atlases, dictionaries, even demonstrations are prerecorded on CD (compact disc) and played back on a computer with as much realism as television. What's more, unlike television, it interacts with the user; ie, the user has control over what's on screen. Computer games are suddenly much more realistic, educational programs become interactive and therefore far more interesting and more fun, instruction manuals and reference documents become personal tutorials.

## How Does it Work?

A multimedia kit consists of a combined sound card and CD-ROM (Compact Disk Read Only Memory) drive. The sound card converts digital information into high-quality sound (it may have an inbuilt speaker and will usually have a socket for extension speakers). The CD-ROM drive allows you to read the information on a compact disc which can store high quality photographic images and animation. The CD is very much like the one you use on your stereo system. Because it can store huge amounts of information (approx 600Mb or the equivalent of 500 high density floppy disks), the complex images and information required for multimedia is made possible.



## CD-ROM Multimedia Kit

Full-colour moving pictures, text, narration and high-quality colour images on your computer! You'll be amazed at what CD-ROM (Compact Disc Read Only Memory) can do! With this incredible package, your PC can become an entire reference library and an invaluable educational tool. You can even play your audio CDs through your computer. The CD-ROM drive will fit into any 5.25" half-height drive bay on your IBM compatible (not suitable for XT's). Just look at what you get:

- Includes Sound Blaster Pro (short version)
- CD-quality sound (you can even play normal audio CDs)
- Ability to display photographic images & motion video (requires VGA display)
- Audio jacks for quality sound through your own speaker system
- Full compliance with MPC standards
- Front mounted stereo headphone jack and volume control
- PLUS 3 Sensational CD-ROM discs including: Software Toolworks Encyclopedia MPC, Animals and Creative Sampler. You also get the ever-popular Lemmings computer game on disk.



3.1, Monologue for Windows and the incredibly popular Lemmings and Indy 500 games. Sound Blaster is supported by the world's largest software library and sets the new standard in IBM-compatible sound cards! Supplied with 3.5" disks (5.25" available on request).

**\$799**

Cat X-2265

## Sound Blaster Ver. 2 Deluxe

The all-new 2.0 Deluxe version of Soundblaster is now even better and comes with fantastic new software and games. Features include: An 11-voice AdLib-compatible music synthesiser, voice recording, Digital sound sampling and more. Sound Blaster has its own power amplifier and MIDI output (via an optional MIDI connector box). Bundled software includes: Creative Wavestudio, Sound OLE, Talking Scheduler, Creative Mosaic, Voice Utilities, SB Talker with Dr Sbaitso, FM Intelligent Organ, Talking Parrot, MM Play Presenter, Jukebox for Windows

## Video Blaster

With the sensational new Video Blaster, you can now combine images from your video camera, video recorder or video disc in your PC applications! You can select video from any of three composite video inputs (PAL or NTSC) and place them in your Windows applications, opening up a whole new realm of possibilities for presentations. A huge range of manipulation options are available including: live and split image zooming and scaling; freeze, save and load video images; cropping and resizing; hue, saturation, brightness and contrast control, vertical and horizontal panning. Plus, it has colour keying, luminance and chrominance masking. Supports PCX, TIFF, BMP, MMP, GIF and TARGA formats. You can also mix and amplify stereo sound from many audio sources: stereo line-in, CD audio, FM stereo or microphone, and you get full software control over channel and microphone volume. Comes with Micromind ACTION, TEMPRA Special Edition, Creative Video kit and Creative MMPLAY. Includes bonus Microsoft Video for Windows (value \$300).



**\$799**

Cat X-2270

## 16-Bit Sound Blaster

Now you can have CD-quality audio (16 bit) through your computer! The sensational 16-bit Soundblaster provides access to sophisticated audio applications (speech recognition and real-time data compression 4:1). Advanced features include: 8/16 bit stereo

sampling from 5kHz to 44.1kHz, 16-bit real-time compression/decompression (Creative ADPCM, CCITT), automatic dynamic filtering for digital audio recording and playback, stereo digital/analogue mixer and MIDI interface. There is also a built-in power amplifier (4W), and inputs for FM music, microphone, line-in and CD as well as a joystick port. It comes complete with a microphone and a fantastic list of software including: Software Toolworks Encyclopedia (on CD), HSC InterActive, PC Animate Plus, Monologue for Windows, Creative Wave Studio, Creative Sound, Creative Talking Scheduler, Creative Mosaic, SB Talker with Dr Sbaitso, FM Intelligent Organ and DOS and Windows drivers.

**\$149**

Cat X-2054

**\$499**

Cat X-2060





## Computer Dust Cover

Even sitting on the bench, computers soon manage to look like they've been playing with a grease monkey in the sand-pit. To protect your valuable computer and help reduce down time, this handy dust cover is just the thing, it's anti-static and has a separate keyboard cover.

**For Desktop Computers** **\$15<sup>95</sup>**

Cat X-3890

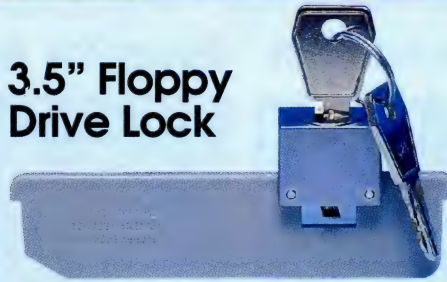
**For Mini Tower Computers** **\$16<sup>95</sup>**

Cat X-3886

**For Full Tower Computers** **\$17<sup>95</sup>**

Cat X-3885

## 3.5" Floppy Drive Lock



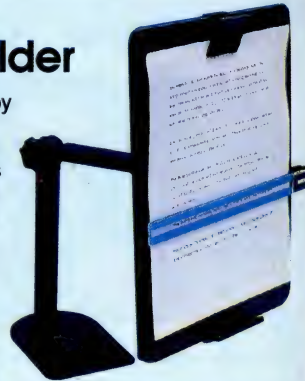
A great idea! This handy Disk Drive Lock simply slips into most 3.5" drives and allows you to securely key-lock it. It's a fantastic security device and, if ever you've had young children play post the letter in your disk drive, you'll know it's an essential computer accessory.

**\$19<sup>95</sup>**

Cat X-8644

## Copy Holder

A sturdy plastic copy holder with adjustable arm and platter which allows you to find the right working angle. The platter has adjustable clips for securing the copy sheet and a sliding rule so you can keep track of your place in the text. It's a must for anyone copying text to screen.



**\$24<sup>95</sup>**

Cat X-1199



## CPU Floor Stand

This is a fantastic idea that leaves you with room to work on your desk. The CPU floor stand allows you to park your computer on its side, and hide it under your desk, without any risk of it falling over. It's fully adjustable to suit most computers.

**\$24<sup>95</sup>**

Cat X-3810

## Copy Clip

A clever device to hold documents beside the monitor where you need them while typing. The swing arm attaches to the side of your monitor and folds out of the way when not in use. It's ideal for secretaries, writers or anyone who copies text.

**\$9<sup>95</sup>**

Cat X-1198

# Modems and Fax Modems

## Line Powered Pocket Modem



It fits in your pocket! The FlashTalk mini-modem is ideal for anyone with a laptop/portable computer, or anywhere space is at a premium. FlashTalk measures just 110 x 60 x 24mm and, as it's powered by the phone line, it doesn't require batteries or bulky power packs. Features include Hayes AT command set compatibility, auto dial/ answer/ disconnect, user modifiable non-volatile RAM, 10 user-preset telephone numbers and full and half duplex operation. Complies with Bell 103 (300bps), Bell 212A & V.22 (1200bps), V.22bis (2400bps) standards.

connect, user modifiable non-volatile RAM, 10 user-preset telephone numbers and full and half duplex operation. Complies with Bell 103 (300bps), Bell 212A & V.22 (1200bps), V.22bis (2400bps) standards.

**FlashTalk™** **\$299**

Cat X-3319

## Australian Designed and Manufactured!



**AVTEK**  
DATA COMMUNICATIONS

## Mega Data/Fax Modem

A fax and modem in one! The most economical way to get the best of both worlds. The fax is CCITT Group III compatible with a transmission rate of 9600bps and receive rate of 4800bps with automatic fallback. What's more, you can transmit facsimiles directly from within many popular word processing programs. Comes with PC Fax system software. AVTEK modems allow data transfer at 2400bps (V.22bis), 1200bps (V.22) and they support Bell standards 103 and 212A for international communication requirements.

**Internal Version** Cat X-3314

**External Version** Cat X-3315

**\$299**

**\$349**



## Super Fast! Spirit II Modem/Fax

Imagine receiving a large document at 300bps (about six words a second) - you could bake a leg of lamb while you wait. Now imagine receiving that same document at 57,600bps (you've just broken the 1000 words/second barrier).... the sensational Spirit II makes it all possible! Suddenly speed is no longer a barrier to modem communication. The Spirit II features 57,600 (throughput) 14,400, 12,000, 9600, 7200, 4800, 2400 and 1200bps data rates, it's compatible with CCITT V.32bis/ V.32/ V.22bis/ V.22 and Bell 212A modulation standards as well as CCITT Group 3 fax (9600bps send & receive) standards. MNP levels 2 to 4 and V.42 error correction. MNP level 5 and V.42 bis data compression. Comes complete with Qmodem, DOSFax and WinFax Lite software.

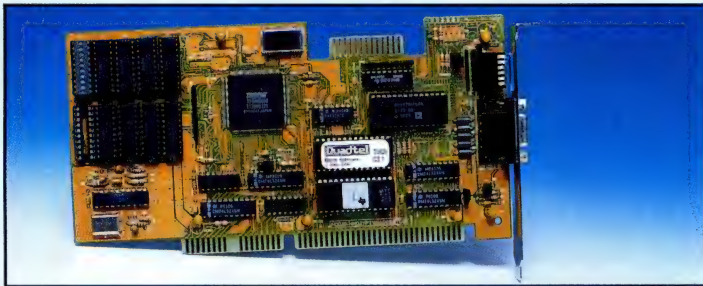
Cat X-3318

**\$649**



# Computer - Upgrade Cards

## 1Mb Super VGA Graphics Adaptor



**256 colours at up to 1024 x 768 pixels resolution!**

This superb 16-bit Super VGA graphics adaptor is suitable for IBM PC/XT/AT compatibles. It's also compatible with multi-sync and PS/2 monitors. Emulates Hercules, MDA, CGA, EGA and VGA. With interlaced and non-interlaced monitor support and seven selectable display modes from 640 x 400 to an incredible 1024 x 768. It comes complete with 1Mb of memory, software, drivers and comprehensive manual.

Cat X-2001 **\$149**

## Multifunction I/O Card

The complete solution for your XT/AT computer on a single card! Comes with parallel printer port, RS-232C serial port (second port optional), games (joystick) port, real time clock, 3.5"/5.25" floppy disk controller, cables and manual. Supports up to two 360K, 720K, 1.2Mb or 1.44Mb drives (1.2 & 1.44Mb for ATs only).

Cat X-2026 **\$79**



## Co-Resident Floppy Controller

Allows you to add a third and/or fourth floppy disk drive to your AT compatible. Designed to co-exist with an existing floppy controller card, it lets you have the additional drives internally or externally. Complete with manual.

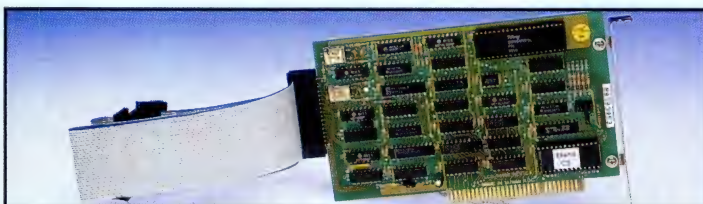
Cat X-2025 **\$69**



## Floppy Disk Controller

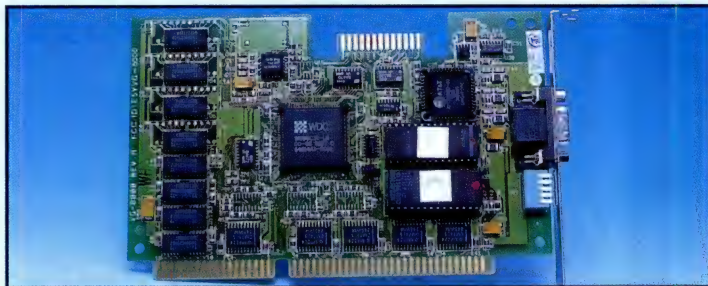
Extremely versatile controller for XT & AT compatibles. Can control one or two 360K, 720K, 1.2Mb or 1.44Mb (1.2 & 1.44Mb for ATs only) floppy disk drives. With cable and full fitting instructions. You can install it yourself - in just a few minutes!

Cat X-2022 **\$49**



## Graphics Accelerator Card

**'93**  
NEW



256 colours might seem a lot, but when you compare it to the brilliance of 32,000, it's like moving from mono to stereo. This sensational Graphics Accelerator card is suitable for interlaced and non-interlaced monitors and can deliver screen redraws at up to 10 times faster than conventional VGA cards. Comes with 1Mb of memory and drivers for windows and DOS applications. It's capable of resolutions of 640 x 400 (32K colours), 640 x 480 (32K colours), 800 x 600 (32K colours) and 1024 x 768 (256 colours). Supports 132 column text mode and emulates EGA, CGA, MDA and Hercules Graphics. Supplied with software, drivers and comprehensive manual.

Cat X-1179 **\$249**

## 3.5" Floppy Disk Drive

A high capacity 1.44Mb Disk Drive suitable for use with any IBM compatible. Designed for internal mounting.

Cat X-2225 **\$129**

5.25" mounting kit for 3.5" drives

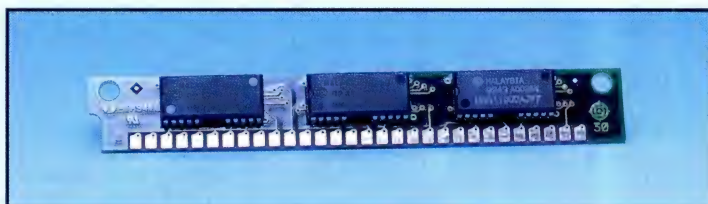
Cat X-2229 **\$15<sup>95</sup>**



## Twin Port Game Card

Want to fit two joysticks to your IBM compatible for faster two-player action? Well, this is just what you need. It's easy to fit, simply slips into any spare slot and gives you two joystick connections.

Cat X-2043 **\$44<sup>95</sup>**



## 2Mb Memory Upgrade

Improve the performance of your computer system with this memory upgrade. It's just the thing for speeding up Windows applications and multitasking. The 2MB upgrade comes with 2 x 1Mb x 9-70ns, 3-chip set Single In-line Memory Modules (SIMMs). They're easy to fit - your PC will be working far more efficiently in no time at all!

Cat X-1022 **\$199**





## SERIAL CABLES

### 9-pin Female - 25-pin Male

Ideal for modem connection to 9-pin serial port. Fitted with DB9 female connector one end and DB25 male connector at the other.

2-metre version Cat X-8007 **\$22<sup>95</sup>**  
5-metre version Cat X-2697 **\$34<sup>95</sup>**

### 25-pin Male - 25-pin Male

Fitted with 25-pin male 'D' connectors.

All lines connected straight through.

2-metre version Cat X-3574 **\$29<sup>95</sup>**  
5-metre version Cat X-2696 **\$34<sup>95</sup>**

### 25-pin Male - 25-pin Female

Cable fitted with 25-pin female & 25-pin male 'D' connectors on either end. All lines connected straight through.

2-metre version Cat X-3564 **\$29<sup>95</sup>**  
5-metre version Cat X-2695 **\$34<sup>95</sup>**



## EXTENSION CABLES

### Keyboard Extension Cable

A handy two-metre coiled extension cable with 5-pin DIN connectors that allow you to move your keyboard away from the CPU.

Cat X-2600 **\$12<sup>95</sup>**

### PS/2 Extension Cable

Keyboard extension cable to suit IBM PS/2 and compatible computers. 6-pin male mini DIN to 6-pin female mini DIN. 2-metres long.

Cat X-2601 **\$12<sup>95</sup>**

### Monitor Extension Cable

Cable fitted with 9-pin 'D' connectors which allows you to place the monitor away from the CPU.

2-metre version

Cat X-2602 **\$14<sup>95</sup>**

5-metre version

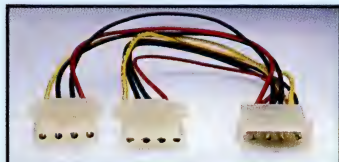
Cat X-2607 **\$19<sup>95</sup>**

### VGA Monitor Extension

A 2-metre cable which has 15-pin high-density connectors at each end. Suits VGA monitors.

Cat X-2603 **\$12<sup>95</sup>**

## INTERNAL CABLES



### 5.25" Floppy Disk Drive Power Splitter

This 'Y' adaptor allows you to connect two disk drives to one power connector. Splits a 4-line Molex male, into two female connectors.

Cat X-2604 **\$7<sup>95</sup>**



### 3.5" Floppy Disk Drive Power Adaptor

Allows the connection of standard 3.5" disk drives to a 5.25" power supply connector. Update your computer to the modern 3.5" standard.

Cat X-2605 **\$6<sup>95</sup>**



## PRINTER CABLES

### 25-pin Male - Centronics

A standard printer cable for IBM compatibles with DB 25-pin male connector and 36-pin Centronics plug. Also suitable for Atari STe.

2-metre version Cat X-8614 **\$22.95**  
5-metre version Cat X-8619 **\$32.95**

### Right-Angle IBM Style Printer Cable

Handy right-angled Centronics cable for use where space is limited. Also helps avoid the hassles of the cable getting caught up in the paper path.

Cat X-8615 **\$22<sup>95</sup>**

### Centronics Cable

Fitted with 36-pin (male) Centronics connectors at each end. As used on other style (not IBM compatible) computers and switch boxes.

2-metre version Cat X-9005 **\$26.95**  
5-metre version Cat X-8618 **\$29.95**

### Centronics Extension Cable

A 36-pin male to female Centronics extension cable. 2-metres long.

Cat X-8617 **\$19<sup>95</sup>**



## APPLE/MAC CABLES

### Adaptor Cable

Apple IIGS or Mac Plus, SE, II, IIfx, IIfx adaptor cable. 300mm long. DB9 female to 8-pin male mini DIN.

Cat X-2693 **\$19<sup>95</sup>**

### Modem Cable

Allows connection of standard RS232 modems, or serial printers with DB25 connectors, to the Mac +/SE/II or Apple IIGS. Null wiring configuration, 300mm long. DB25 male to 8-pin male mini DIN

Cat X-2690 **\$19<sup>95</sup>**

### Printer/Modem Cable

Apple II/I+/Ile to ImageWriter II or IIGS, Mac Plus, SE, II/IIfx/IIfx to Modem Cable. DB25 male to 8-pin male mini DIN. All lines connected straight through.

Cat X-2691 **\$19<sup>95</sup>**

### Printer Cable

Apple IIGS, Mac Plus, SE, II/IIfx/IIfx to ImageWriter II/LQ or LaserWriter II NT/NTX. 8-pin male mini DIN to 8-pin male mini DIN.

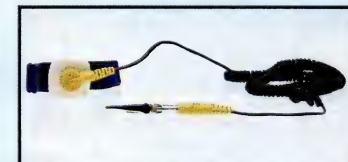
Cat X-2692 **\$19<sup>95</sup>**



### Floppy IDC Universal Data Cable

A floppy drive data cable fitted with both edge and DIL socket connectors. Facilitates easy fitting on both 5.25" and 3.5" floppy disk drives.

Cat X-2606 **\$19<sup>95</sup>**



### Anti-Static Wrist Strap

A must for installing expansion cards or changing ICs. Helps prevent stray static charges which can destroy ICs in an instant. With adjustable fastening, coiled ground lead and high value series resistor, for added safety.

CatX-2042 **\$12<sup>95</sup>**





## PS/2 Keyboard Adaptors

Plug-in adaptors for converting mini 6-pin PS/2 keyboard plugs to the larger 5-pin IBM style and vice versa.

IBM - PS/2 Adaptor (6M-5F) Cat X-2800

PS/2 - IBM Adaptor (6F-5M)

**NEW 93**

Cat X-2801 **\$12<sup>95</sup> ea**



## RJ-11 Modular Phone to DB25 Adaptors

A quick and easy way to connect between two computers or devices (serial connections) using a modular telephone extension lead... and there's no soldering. Up to six connections can be made if using a 6-wire phone extension lead.

DB25 Female Adaptor Cat X-2671

DB25 Male Adaptor Cat X-2673

**\$9<sup>95</sup> ea**

## Standard 25-pin Gender Changers



25-pin Male to 25-pin Male  
Cat X-3565

25-pin Female to 25-pin Female

Cat X-3566 **\$9<sup>95</sup> ea**



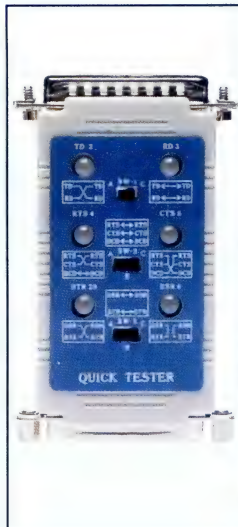
Quality adaptors for joining 9-pin cables to 25-pin cables of either gender.

9-pin Female/25-pin Male

Cat X-2660

9-pin Male/25-pin Female  
Cat X-2661

**\$12<sup>95</sup> ea**



## RS-232 Quick Tester

Allows you to switch and test serial lines. Leave it in-line, or use it to determine pin connections when making up a jumper box (X-3569). 3 switches and 6 LEDs allow you to set it for any of the 8 most popular RS-232 configurations and monitor the appropriate lines. 25-pin male and female connectors.

Cat X-2652 **\$39<sup>95</sup>**



## Slimline 9-pin Gender Changers

These slimline gender changers are only 17.5mm wide, thus eliminating the usual space problems caused by standard gender changers. When plugged into your existing cable they add only 11.2mm to the cable length.

9-pin Female / 9-pin Female

9-pin Male / 9-pin Male

Cat X-2675

Cat X-2676

**\$12<sup>95</sup> ea**



## RS-232 Breakout Box

Ideal for those unusual serial connections. An in-line tester/adaptor to make complex and time-consuming serial connections a breeze! Comes with 25-pin male and female connectors plus jumper-pads, wires and 24 in-line switches. The tester has 8 bi-colour LEDs to monitor the lines.

Cat X-2654 **\$49<sup>95</sup>**



## Space-saving slimline design! Slimline 25-pin Gender Changers.

They're only 17.5mm wide and add just 11.2mm to your cable length when plugged in.

25-pin Female/25-pin Female

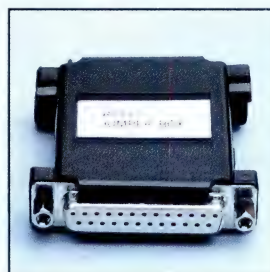
25-pin Male/25-pin Male

Cat X-2677

Cat X-2678

**\$12<sup>95</sup> ea**

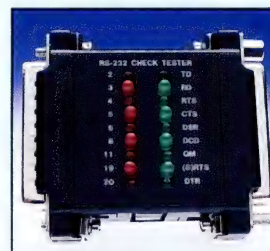
## RS-232 Serial Jumper Box



25 pin male and 25 pin female connectors. With jumper pads and wires that allow permanent soldering for RS-232 connections.

Cat X-3569 **\$9<sup>95</sup>**

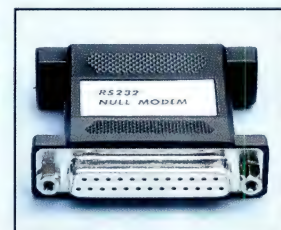
## RS-232 9 Line Monitor Serial Port Tester



Intended as a line monitor, or for determining the serial port status. 13 LEDs monitor the most commonly used lines. With standard 25-pin male and female connectors.

Cat X-2650 **\$19<sup>95</sup>**

## RS-232 Null Modem Adaptor



With a DB25 connector at each end. It's wired for full 'handshaking' and allows connection of serial printers (requiring null modems) or the connection of two computers 'back to back'.

Cat X-2664 **\$12<sup>95</sup>**





## Budget Diskettes

*Ideal for games & home use!*

Value plus! Red Spot budget diskettes are ideal for general home use, games, etc. They meet the ANSI (American National Standards) specifications for quality and reliability, and come without the fancy packaging, so you get the best value for your money. In box of ten diskettes.

5.25" DS/DD	Cat X-3521	<b>\$6<sup>95</sup></b>
3.5" DS/DD	Cat X-3508	<b>\$11<sup>95</sup></b>
5.25" DS/HD	Cat X-3528	<b>\$12<sup>95</sup></b>
3.5" DS/HD	Cat X-3512	<b>\$22<sup>95</sup></b>



## DSX Diskettes

*For day to day applications*

DSX diskettes are exceptional value for money. They come from one of the world's leading manufacturers and have a 33% margin over ANSI specifications, so you can rest assured that your day-to-day work is in good hands. You're assured that every disk is 100% guaranteed. In box of ten diskettes.

5.25" DS/DD	Cat X-3460	<b>\$9<sup>95</sup></b>
3.5" DS/DD	Cat X-3461	<b>\$15<sup>95</sup></b>
5.25" DS/HD	Cat X-3462	<b>\$15<sup>95</sup></b>
3.5" DS/HD	Cat X-3463	<b>\$26<sup>95</sup></b>

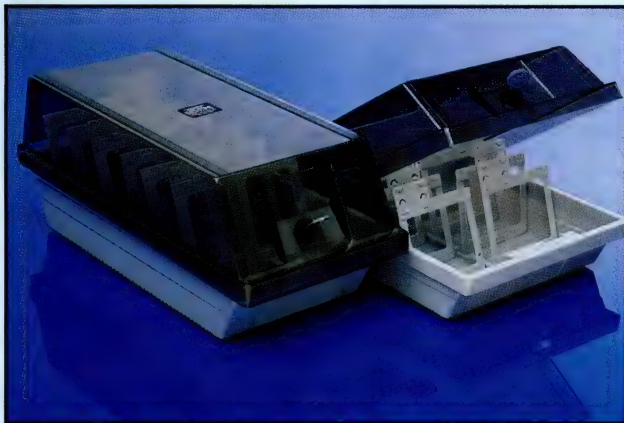


## KAO Preformatted Diskettes

*For critical data!*

KAO is one of the world's largest-selling diskettes! They're made to the highest possible quality with a 75% margin over ANSI specifications. You won't find a more reliable disk - they're 100% certified error-free and come with a Lifetime Warranty. 10 preformatted diskettes per box.

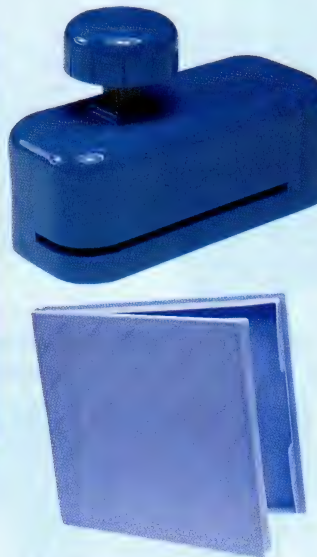
5.25" DS/DD	Cat X-3450	<b>\$15<sup>95</sup></b>
3.5" DS/HD	Cat X-3451	<b>\$19<sup>95</sup></b>
5.25" DS/HD	Cat X-3452	<b>\$17<sup>95</sup></b>
3.5" DS/HD	Cat X-3453	<b>\$32<sup>95</sup></b>
Apple DD 720k	Cat X-3454	<b>\$19<sup>95</sup></b>
Apple HDD 1.4k	Cat X-3455	<b>\$32<sup>95</sup></b>



## Disk Storage Systems

Quality Australian-made disk storage systems to keep your disks safe and free from dust, dirt, etc. They're made to suit 5.25" and 3.5" diskettes. Made from tough plastic they have a lockable, clear perspex lid for added security. Come complete with file dividers.

5.25" Disk Box	Holds 125 Disks	Cat X-3540	<b>\$12<sup>95</sup></b>
3.5" Disk Box	Holds 90 Disks	Cat X-3541	<b>\$12<sup>95</sup></b>
3.5" Disk Box	Holds 40 Disks	Cat X-3542	<b>\$6<sup>95</sup></b>



## Disk Wallet

This 5.25" Disk Wallet is ideal if you need to send disks through the post or for carrying those important disks safely in your briefcase. Each wallet can hold up to 5 disks.

Cat X-3537	<b>\$1<sup>95</sup></b>
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## Disk Notcher

Get twice the value out of your disks in single-sided drives with this easy-to-use Disk Notching Tool. It tells the drive that both sides of your disk are the top side. Just the thing for Apple II and CAT computers!

Cat X-3504	<b>\$7<sup>95</sup></b>
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## Disk Drive Head Cleaning Kit

Keep your disk drives performing at their best! Clean your disk drives regularly with these long life disk Head Cleaners and you'll save your valuable diskettes from damage or data loss. Easy to use, it takes only minutes to get your drives performing like new.

3.5" Head Cleaner	Cat X-3520	<b>\$9<sup>95</sup></b>
5.25" Head Cleaner	Cat X-3519	<b>\$9<sup>95</sup> ea</b>





# Computers - Mouses and Joysticks



## Bargain 3-Button Mouse

A fantastic low price for this three-button mouse. It's great to use and looks good as well. The tracking ball can easily be removed for cleaning and it's suitable for PC, XT & AT compatibles. Comes complete with mouse drivers. It's hard to beat for value!

Cat X-3797 **\$24<sup>95</sup>**



## Budget Mouse

With pop-up menus! It's a quality mouse that gives you a whole lot more. Connection is as easy as plugging it into your serial port and it comes complete with pop-up menu software for Lotus 1-2-3, Wordstar, DBase 3, DOS, Paradox, and more. Also includes a fun card game.

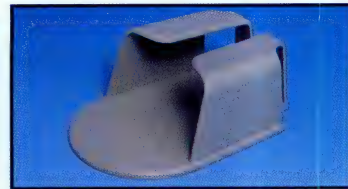
Cat X-3800 **\$34<sup>95</sup>**



## Atari/Amiga Mouse

A superb mouse that's a pleasure to use and can be switched for either Atari ST or Amiga systems in an instant. It uses micro-switched buttons for superior tactile feedback and longer life, and has a resolution of 360dpi. It's a quality product that's easily affordable.

**NEW '93** Cat X-6512 **\$49<sup>95</sup>**



## Mouse House

A great way to keep your desktop tidy. The Mouse House simply sticks to the side your computer or desk. When you finish working, simply store your mouse out of the way. You'll love the extra work space it'll give you

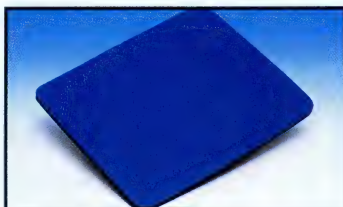
CatX-3799 **\$8<sup>95</sup>**



## Aussie Mouse Pad

These Australian-made mouse pads are very well-made and make using your mouse much easier. The traditional aboriginal print design adds a little class to your desktop.

**NEW '93** Cat X-3894 **\$19<sup>50</sup>**



## Mouse Pad

You'll work faster and easier with a mouse pad! This soft rubber Mouse Pad has a cloth-weave finish for high traction and silky-smooth movement. It helps keep the mouse tracking mechanism cleaner and makes working with your mouse much more precise.

Cat X-3891 **12<sup>95</sup>**



## Starfighter 5

This new video-game style joystick is easy to hold and very fast. It employs the new digital design and there's no trimmer required. What's more, it has automatic centring without adjustment, two fire buttons and turbo fire selector. Suits most IBM compatibles and comes with six foot cable and 15-pin connector.

**NEW '93** Cat X-3591 **\$39<sup>95</sup>**



## Mini IBM Joystick

This tiny, lightweight joystick fits easily in the palm of your hand for greater flexibility! It has two fire buttons, adjustable centring and a smooth, precise action. Compatible with IBM PC, XT & AT computer systems.

Cat X-3581 **\$22<sup>95</sup>**

## Warrior 5 Joystick

A superb joystick that's incredibly fast for those big action games. Warrior 5 is ergonomically-designed for easy use and is suitable for most IBM compatibles. It has auto centring, 2 positive response fire buttons, X & Y axis trim control switches and non-slip suction cup feet. Comes with a four foot cable and 15-pin connector.

Cat X-3583 **\$49<sup>95</sup>**



## Flight/Car Joystick

The sky's the limit with this realistic aircraft styled joystick! It's fantastic for flight simulation and racing car games. Has up/down (lockable), left/right controls, two fire buttons on each handle and throttle control. Also has X & Y axis centring and suction caps on the base for added stability. Suits most IBM compatibles.



Cat X-2700 **\$79<sup>95</sup>**

## Python 5

All-new digital design! The joystick that puts you in total control. Its advanced features include: Automatic centring without adjustment, two fire buttons, turbo fire selector and stabilising suction caps to hold it firm. Suits most IBM compatibles and has a six foot cable with 15-pin connector.



**NEW '93** Cat X-3593 **\$39<sup>95</sup>**

## IBM/Apple Joystick

A full featured, reliable joystick that's suitable for both Apple and IBM computers. It's lightweight, well designed and feels great in your hands. Features include 3 fire buttons, auto centring stick, and screen centring controls.



Cat X-3590 **\$39<sup>95</sup>**

## Atari/Commodore Joystick

This rugged joystick uses micro-switch control for the ultimate in speed and reliability. Made in Australia, it's built just like the arcade machine joysticks, so it'll take just about anything you can dish out. Its suction base keeps you firmly anchored in the cockpit, plus it has three fire buttons.



Cat X-3831 **\$59<sup>95</sup>**

## 2 Joysticks on 1 Port! Joystick Adaptor



What a great idea! This inexpensive joystick adaptor allows you to plug two joysticks into one joystick port for even faster action when you're challenging a friend. Suits all IBM compatibles.

Cat X-2041 **\$9<sup>95</sup>**

## Twin Port Joystick Port



Double the action by connecting two joysticks to your IBM compatible for two-player games. This quality twin joystick port is easy to install and suits IBM compatible PC's XT's, AT's and SX's.

Cat X-2043 **\$44<sup>95</sup>**



## Super VGA Colour Monitor

**NEW '93 DSX**



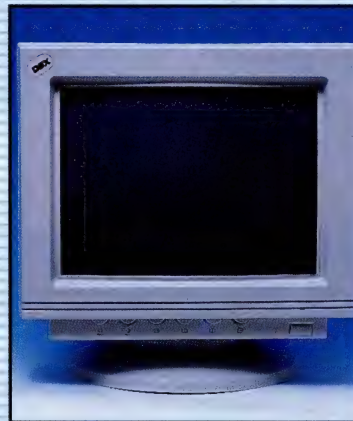
A superb, high-quality 30cm Super VGA colour monitor with a super-sharp 0.28mm dot pitch which makes it ideal for graphics or text. The non-glare, dark tint screen has a built-in swivel base and all controls are mounted at the front for maximum ease of use. It has a DB15 input connector and comes complete with cable to suit IBM compatibles.

**\$449**

Cat X-8475

**NEW '93**

## Non-Interlaced Super VGA Monitor



A 30cm Super VGA colour monitor with a sharp 0.28mm dot pitch for higher resolution. It's non-interlaced which means it has a higher refresh rate. Screen flicker is almost eliminated; so you can work on it for much longer without fatigue! All controls are conveniently located on the front of the monitor. The built-in swivel base gives you freedom to adjust the monitor for the best possible viewing angle. DB15 input connector. Includes cable to suit IBM compatibles.

**\$549**

Cat X-8476

**NEW '93**



## 101 Key Keyboard

A quality IBM AT-style keyboard with separate cursor and page-control keys as well as a numeric keypad and 12 function keys conveniently located across the top of the keyboard. The key switches give it a great feel with an accurate, positive touch. Fitted with standard 5-pin DIN connector.

**\$69<sup>95</sup>**

Cat X-3835

*Greater speed, greater accuracy!*

## Graphics Tablet



Throw away your mouse for greater freedom, greater flexibility and faster response! The incredible Acecat 13 x 13cm (5" x 5") Graphics Tablet will revolutionise the way you use your mouse-based computer. Selecting an icon, drawing, tracing, CAD applications can all be performed with much greater speed and accuracy.

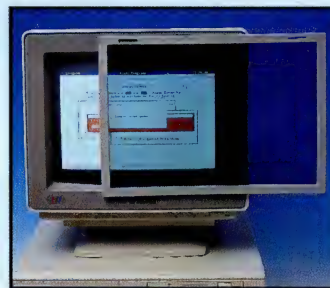
Use it under DOS and you'll love it, use it under

Windows applications and, taking advantage of 'absolute positioning', you'll be astounded at how much easier, faster, more comfortable and more precise your creative work can become. Accurate freehand drawing, tracing with absolute precision, image manipulation at the stroke of a pen, pointing and picking without having to drag a mouse across the page.

It has a resolution of up to 1000 lines per inch, a sampling rate of up to 150pps and simply plugs into your serial port. It's compatible with PC, XT, AT, 386 & 486 machines and comes with Windows and ADI drivers, connecting cables and an easy-to-follow user's guide.

**\$249**

Cat X-3818

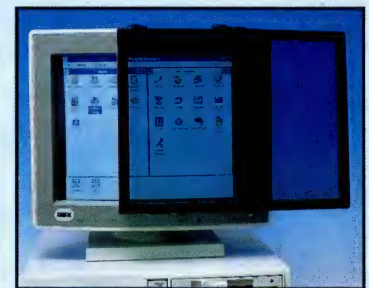


## Screen Filter

Put an end to annoying reflections on your monitor and increase screen contrast with this easy-to-install Screen Filter. It suits both colour and monochrome monitors up to 35cm. Simply attaches to your monitor with velcro pads.

**\$24<sup>95</sup>**

Cat X-3888



## High Quality Screen Filter

Helps to increase screen contrast and clarity, reducing eyestrain and glare. It also features an earth-wire to reduce the screen's static charge and therefore its attraction of dust.

**\$49<sup>95</sup>**

Cat X-3405

## Now runs in Windows! Handy Scanner

With 'Handy Scanner', you won't have to laboriously copy illustrations into your favourite paint program by hand. Just draw Handy Scanner across the page and, in an instant, the image is on your computer screen. Renders black & white and dithered greyscale levels at up to 400dpi resolution. The scanning window is 105mm wide, more than adequate for most printed pages. Includes Pagecomp software for Windows.

**\$259**

Cat X-3832



## Keyboard Holder

A smart and easy way to maximise your desk space. Simply slot your keyboard into this keyboard holder and it's out of the way, but close to hand when you need it. It also makes it all but impossible to spill your coffee on the keyboard when it's not in use!

**\$9<sup>95</sup>**

Cat X-1197





**NEW '93**



## Outstanding Quality! OKI OL 400 LED Printer

All the advantages of a laser printer in a package that's more compact, lighter, and much less expensive to own and run. With fewer moving parts, the OL 400 is more reliable than a laser printer. The amazing OL 400 has to be seen to be believed. Features include a print speed of up to 4 pages per minute, 25 resident Bitmap fonts, 512K memory (expandable to 2.5Mb) automatic paper feed, 300dpi resolution and a straight through paper path for envelopes and transparencies. Comes with a five year warranty on the LED head (12 months on printer).

**\$1299**

Cat X-3202



**NEW '93**

## EPSON Stylus 800 Ink Jet

A quiet, high quality printer that's truly fast! The 48-nozzle print head delivers an incredible 360 x 360dpi resolution which approaches the quality of a laser printer. Paper feed is automatic (up to 100 sheets) and you can manually insert envelopes and transparencies without removing the paper tray. It delivers up to 180cps (12cpi) and that's at letter quality! Has 7 resident fonts, four of which are scalable from 8 to 32 points.

**\$699**

Cat X-3294

**NEW '93**



## A Top-Of-The-Line 24-pin Dot Matrix Colour Printer That's Built For Hard Work! Citizen GSX-240 Colour Printer

Amazing print speeds of up to 300cps (15cpi) draft or 99cps (15cpi) letter. Up to 8 quality font styles plus scalable fonts from 8 to 40 points for maximum versatility and control. Features include friction or tractor feed, the convenience of paper parking, rear or bottom feed and an 8K (expandable to 128K) buffer so you don't waste computer time waiting for that job to print.

**\$799**

Cat X-3203

**NEW '93**



## Scalable Fonts! Epson LQ-100 24 Pin Printer

The new standard in printer size, performance and convenience, the LQ-100 gives you complete push-button control over all functions from the front panel. With a print speed of up to 200cps (12cpi), it's fast (72 cps NLQ at 12cpi). You get five built-in fonts (two scalable from 8pt to 32pt), outline and shadow fonts, double height plus more. There's an inbuilt auto sheet feeder, manual feed, and it takes up little more space than an A4 sheet of paper, plus you can stand it up for a tiny 130 x 375mm footprint!

**EPSON**

**\$459**

Cat X-3264





## Star LC-10 9-Pin Colour Printer

Colour printing at a bargain basement price! The Star LC-10 9-pin colour printer makes great-looking documents affordable. With four resident type styles and a wide range of text-enhancement modes, you get over twenty font options. What's more, there's the convenience of paper park, friction and tractor feed, up to 144cps (in draft mode) and selectable letter quality (NLQ) print. It's exceptional value, and like everything else that carries the Star brand, you can depend on it.

Cat X-3222 **\$399**



## With paper park! Star LC-20 Multifont Printer

The LC-20 9 pin dot matrix printer is a real workhorse. With a fast 180cps draft mode, near letter quality (NLQ) at 45cps, selectable friction-feed for loose-leaf paper and envelopes and tractor-feed for continuous paper. There's a 4kB buffer so you don't lose computer time and paper parking so you can easily change from continuous to loose-leaf paper. There are also 8 text enhancement modes and 4 resident fonts to give your documents that professional look.

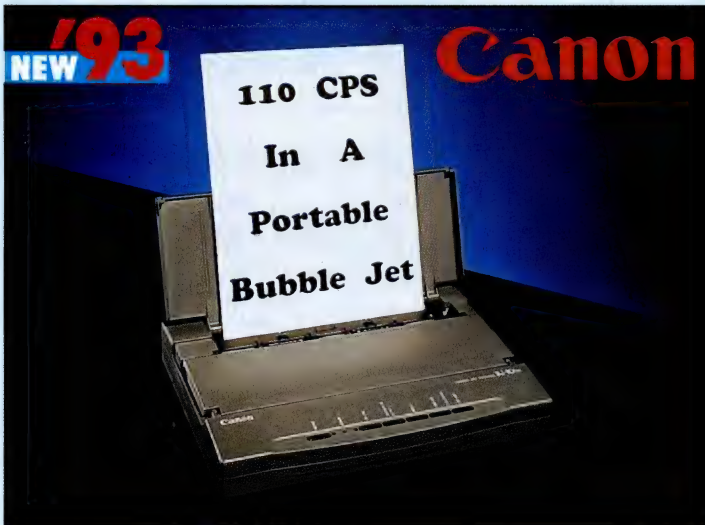
Cat X-3207 **\$299**



## Star Multi-Font 24 Pin Printer

The incredible array of features on the Star LC24-100 make it ideal for the busy office or home. Up to a super fast 240cps (15cpi) or 80cps (15cpi letter quality) it's perfect for correspondence or graphics. There are 10 fonts to choose from, data compression for up to 25% faster printing, and it has push tractor feed and single sheet loading, as well as the convenience of paper park, top and rear paper feed, quiet mode, scalable fonts, compressed data for less computer waiting time, short tear off and more. Without doubt, a fantastic buy!

Cat X-3278 **\$499**



## Now Even Faster! BJ-10 SX Bubble-Jet Printer

The incredible BJ-10 SX Bubble Jet printer is now 32% faster than the BJ-10ex! It prints at a higher resolution than most laser printers (360dpi) at the fraction of the cost, plus it's unbelievably compact, portable, and whisper-quiet. Power it from the mains (adaptor supplied) or from NiCad batteries (optional), and it weighs just 1.7kg (excluding optional battery and sheet feeder), so it's the perfect match for your lap-top. Print speed is now a fast 110cps (in any mode) and it emulates BJ-10ex, BJ-130e, the IBM Proprinter X24E and Epson LQ510. Measures just 310 x 221 x 48mm.

Cat X-3295 **\$599**



## High quality colour documents at 360 x 360dpi resolution!

## Star LC24-200 Colour

Features include 7 fonts with 13 possible pitch settings and 10 text enhancement features - you get complete control over the way your documents look! There's also the convenience of paper parking, so you can quickly and easily switch from continuous to sheet feed, and top and bottom paper paths. Prints up to 222cps (12cpi) or 67cps (12cpi letter quality).

Cat X-3263 **\$699**



# Computer - Printer Accessories



## Printer Auto Switch

Allows you to connect up to four computers to one, or even two printers. Switching is done automatically! The printer auto switch provides 4 serial inputs for your computers and one serial and one parallel output for your printers. It's microprocessor controlled and it automatically queues print jobs and switches between printers by software command.

Cat X-8620 **\$129**



## Printer Covers

Soft, anti-static plastic covers to help protect your printer from damaging dust and dirt while not in use. Two sizes fit most available printers.

80 Column Version

Cat X-3892 **\$9<sup>95</sup>**

132 Column Version

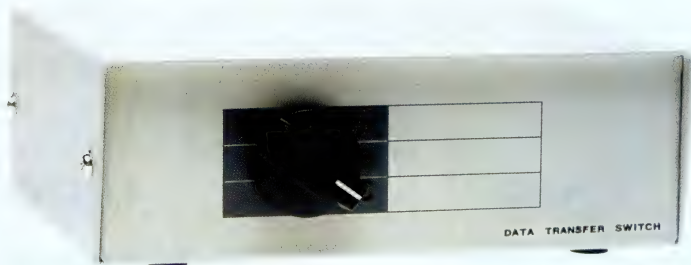
Cat X-3893 **\$14<sup>95</sup>**



## Printout Edge Remover

Here's how you remove the sprocket hole strips from your printouts without destroying your work, and without frustration or hassle. Tear the edges of up to 20 sheets of paper at once, easily! It's fast, it's safe, plus it'll save you time and money. Every tractor-fed printer owner should have one!

Cat X-1194 **\$5<sup>95</sup>**



## Switch Boxes

Hook up more than one printer, etc to one computer, or more than one computer to one device. Selecting different devices is as easy as flicking a switch. You'll never have to mess around swapping cables from one device to another again!

### Connect

Up to 3 printers and 1 computer  
1 printer and up to 3 computers  
Up to 2 printers and 1 computer  
1 printer and up to 4 computers  
Up to 4 computers and 1 modem

### Cat No.

X-3575  
X-3576  
X-3579  
X-3586  
X-3587

### Price

**\$49.95**  
**\$49.95**  
**\$39.95**  
**\$59.95**  
**\$49.95**

## Printer Stands

### Plastic

Lightweight, attractive printer stand with room for paper storage underneath. Adjustable width for 10" and 15" printers.

Cat X-3814 **\$19<sup>95</sup>**

### 10" Wire Stand

Sturdy, plastic-coated steel wire printer stand with paper take-up tray and paper storage underneath. Suits most 80 column printers.

Cat X-3811 **\$24<sup>95</sup>**

### 15" Wire Stand

The same design and features as the 10" version, only this one is designed for wide-platen printers. Suits most 132 column printers.

CatX-3812 **\$29<sup>95</sup>**



## Computer Paper

Continuous form (Fanfold) paper with perforated sprocket strips to suit tractor-fed printers. Paper dimensions include sprocket strips. Measures 9.5" x 11.5".

500 Sheets Cat X-1185

**\$19<sup>95</sup>**

2500 sheets Cat X-1189

**\$49<sup>95</sup>**

## Printer Ribbons

### To Suit

### Cat No.

### Price

DSE 2410, EPSON LQ200/400/800  
DSE 2415, EPSON LQ1000  
SUPER 5, Panasonic 1080/90  
DSE 135, SP80, BX80, CPA80  
OKI ML 172/182/192  
APPLE Image Writer  
EPSON LQ100  
STAR LC20, LC10 (mono)  
STAR LC10 (Colour)

X-3216  
X-3221  
X-3227  
X-3231  
X-3239  
X-3261  
X-3267  
X-3296  
X-3297

**\$19.95**  
**\$24.95**  
**\$14.95**  
**\$19.95**  
**\$19.95**  
**\$14.95**  
**\$19.95**  
**\$12.95**  
**\$29.95**

### To Suit

### Cat No

### Price

CITIZEN GSX 140/240/1200 Mono  
STAR 24200CL Colour  
CITIZEN GSX 240 Colour  
CANON Bubble Jet (2 pack Ink refill)  
CANON Bubble Jet Cartridge  
BROTHER 1324, 1824, 1924L  
RITEMAN C+,F+  
NEC P5200  
PANASONIC 1524, 1624  
BROTHER M1509

X-3321  
X-3322  
X-3330  
X-3323  
X-3324  
X-3325  
X-3326  
X-3327  
X-3328

**\$12.95**  
**\$29.95**  
**\$29.95**  
**\$49.00**  
**\$50.00**  
**\$17.95**  
**\$12.95**  
**\$17.95**  
**\$14.95**  
**\$14.95**



## BEST OF SHAREWARE



**The inexpensive way to buy!**

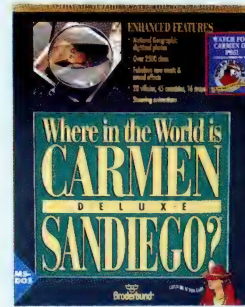
This has to be one of the best value software deals around! These shareware packs come crammed with sensational value software for just about any application:

- Utilities ● Games ● Windows applications
- Word processing ● Educational ● Graphics
- CAD/CAM ● Plus more!

Each pack comes with a fantastic selection for the home or office. Before you invest in new software, check out our sensational shareware range! Comes with 10 x 5.25" or 5 x 3.25" discs per pack.

per pack **\$39<sup>95</sup>**

## Where in the World is Carmen Sandiego Deluxe



Carmen is stealing the world's treasures, from the gondolas of Venice to Mona Lisa's smile! This fascinating new educational game is designed to take advantage of the latest high-end MS DOS machines and the latest technology in sound, music and graphics. Travel to the scene of the crime via realistic digitised slides. With 62 animations, a fantastic music score and fast paced action (a sound card is recommended but not essential).

3.5" Version  
5.25" Version

Cat X-8713  
Cat X-8714

**\$139<sup>95</sup>**

## Spell It Plus



Master over 1000 commonly-misspelled words while you play the game. Spell It Plus is ideal for children from 6 years or for adults who find themselves confusing these all too tricky words. Takes you through five progressive activities including the arcade style Spell-It game. IBM AT-compatible recommended. Comes with 3.5" and 5.25" disks.

Cat X-8784

**\$69<sup>95</sup>**

## Operation Neptune

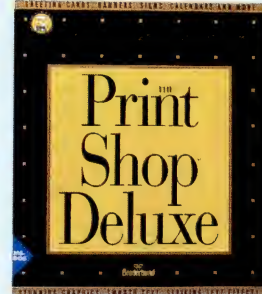


Chilling deep-sea adventure game that teaches children 12 to 14 years maths skills. As Captain of the high-tech mini-sub Neptune your mission is to save the planet from a mysterious toxin from space. You'll have to calculate the risks as you battle the treacherous deep. Comes with 3.5" and 5.25" disks.

Cat X-8790

**\$94<sup>95</sup>**

## Print Shop Deluxe



Print high-quality greeting cards, signs, stationery, banners, gift tags, name tags and posters. The full-colour graphics are sensational with object-oriented images, scalable fonts, special effects for text and much more. A superb program that's ideal for the home, office or school. Requires minimum of 386SX IBM compatible, VGA card and 1Mb RAM.

for the home, office or school. Requires minimum of 386SX IBM compatible, VGA card and 1Mb RAM.

5.25" Version Cat X-8791  
3.5" Version Cat X-8792

**\$139<sup>95</sup>**

## For All The Latest Games Titles - Check Out Our Range And Prices First!

Take a tip and check out our fantastic range of games software when you're looking for the latest titles.

All the latest big name games are in stock as soon as they're available.

You'll find the best range and the biggest names at very competitive prices in all our stores.

## Sim City



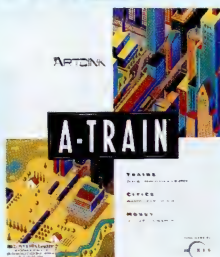
You've got the keys to the city, now it's up to you to make certain that it functions. You'll need to take action against crime, pollution,

traffic, urban decay and much more. Sim City is one of the world's most popular games and now it works under Windows! It's the ultimate strategy game. Requires 640K RAM (1 Mb for Windows systems). Comes with 3.5" and 5.25" disks.

Cat X-9327

**\$79<sup>95</sup>**

## A-Train



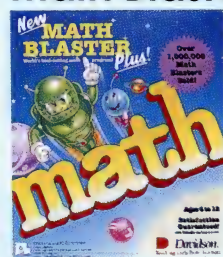
A fantastic simulation based on trains, cities and money! Start off as a railway tycoon and see if you can make it to

the top of the ladder by controlling the city. You'll need to be a shrewd operator or you'll lose the lot. Supports Adlib, Soundblaster Sound Master and Roland MT-32 sound cards. Requires 640K memory. Comes with 3.5" and 5.25" disks.

Cat X-9316

**\$89<sup>95</sup>**

## Math Blaster Plus



Kids 6 to 12 years find this one a bundle of fun. Graphics, animation sound effects and a great arcade-

style game combine to become a powerful teaching tool for addition, subtraction, multiplication, division, fractions, decimals percentages, and more. Comes with 3.5" and 5.25" disks.

Cat X-8785

**\$69<sup>95</sup>**

## The Treehouse



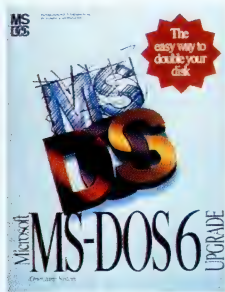
A secret place in the treetops where children 5 to 8 years can explore the world! Seven interactive activities, complete

with animation and sound effects, teaching specific language, music, money, maths, science and social skills. Comes with the theme song on audio cassette and a parent's guide. Available on 3.5" and 5.25" disks.

Cat X-8783

**\$89<sup>95</sup>**





## It doubles your disk! MS DOS 6.0 Upgrade

The most powerful DOS ever! It's now easier to use, far more intuitive and comes with an incredible array of new utilities. With Double Space file compression, you'll

virtually double your disk space, improve disk performance with DEFRAG, and automatically check for viruses with VSafe. SMARTDrive is now better than ever and a new EMM386 provides access to more upper memory! MemMaker automatically optimises memory, there's a new Backup program and Undelete is now a fully fledged utility. Advanced help makes it much easier to use and file management is more powerful than ever. Portable users are in for a treat with new programs to extend battery life by up to 25%, and with Interlink you can link two computers and share files and printers. MS DOS 6.0 looks set to become one of the most exciting products of 1993! (Price firm until 31/7/93)

5.25" Version Cat X-9643  
3.5" Version Cat X-9642

**\$99**

## MS Windows 3.1



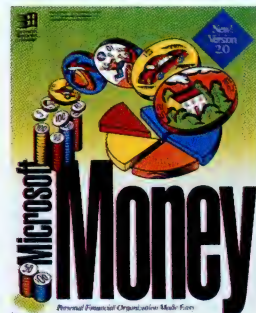
Windows makes using a PC easier for everyone - from the novice to the power user. Version 3.1 includes: True Type scalable fonts, multi-media extension facilities, more printer drivers and an improved file manager. What's more, there's computer-based tutorials, online help, copy and paste, enhanced program

info files and the ability to run as many applications as your system can handle at one time. Incorporating four generations worth of user comments, it's definitely the best Windows ever! Requires MS-DOS 3.1 or later and 2Mb RAM.

5.25" Version Cat X-9795  
3.5" Version Cat X-9796

**\$169**

## Microsoft Money For Windows

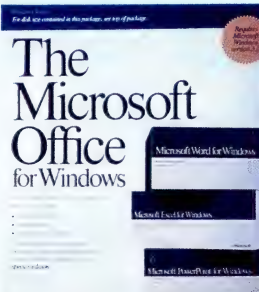


Take charge of your finances with Microsoft Money. Fast, flexible tools let you enter, view, summarise and print financial information with ease. Get a good look at where your money is going with personal and business expense tracking of deposits, withdrawals, tax and loan payments. You

can also forecast future transactions, set budgets, access instant status reports and view multiple accounts simultaneously! Plus, its error-checker identifies and corrects errors when reconciling bank statements! Microsoft Money helps save your most valuable asset... time. Requires Windows 3.0 or later, 1Mb RAM. Comes with 5.25" & 3.5" disks. (Price firm until 31/9/93)

Cat X-9430

**\$59**



## Microsoft Office

Microsoft Word, Excel, PowerPoint and Mail - all together in one powerful package! All four applications are designed to work together under Windows. Direct access and manipulation of one application to another

lets you share data and create complex documents with ease and total control.

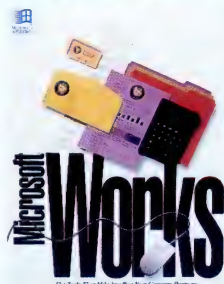
Microsoft Word is a leading word processor program while Microsoft Excel is a top of the line spreadsheet program. Microsoft PowerPoint lets you create eye-catching presentations and Microsoft Mail Work station lets you send, reply to or cut and paste message information.

With easy-to-use Toolbars, WYSIWYG displays and online help, getting more done more easily has never been easier. Requires MS-DOS 3.1 or later, Microsoft Windows 3.0 or later, minimum 2Mb of RAM.

5.25" Version Cat X-9949  
3.5" Version Cat X-9963

**\$849**

## Microsoft Works For Windows



Works for Windows handles your word processing, spreadsheets, database management, charting and illustration. The spreadsheet has a gallery of 31 different chart types while a database organises thousands of records quickly and accurately. Create mailing labels, design forms,

check spelling plus copy and paste. What's more, it works under Windows, so it's not only easy to use, but easy to learn. With pull-down menus, click-on tool bars and command buttons which simplify everything, Works for Windows is your ideal business partner. Requires, MS-DOS/PC-DOS 3.1 (or later), Windows 3.0 (or later), 640K, EGA/VGA graphics card.

Comes with 5.25" & 3.5" disks.

Cat X-9793 **\$249**

## Microsoft Publisher For Windows

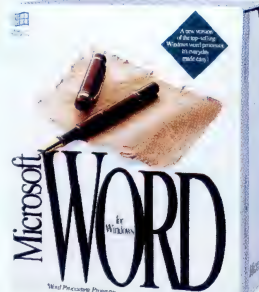


Create professional-looking newsletters, business forms, flyers and reports! Publisher features an inbuilt word-processor, spell-checker, flexible page layout, layout guides, movable rulers, drawing tools and much more! It's super-easy to get started, with extensive help features and options that allow you to

design professional and eye-catching publications straight away! Contains 5.25" high-density disks and 3.5" high density disks. Requires DOS 3.1 (or later), Windows 3.0 (or later), 2Mb of RAM, EGA/VGA graphics card.

Comes with 5.25" & 3.5" disks.

Cat X-9794 **\$249**



## Microsoft Word for Windows

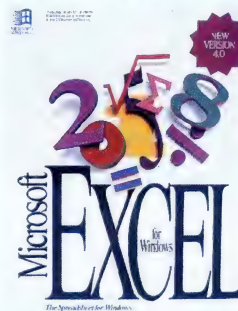
One of the most powerful word processing/desktop publishing programs available! It's so close to a fully functional desktop publisher your documents will look like they came from a design studio. You'll save

time by installing icons for the functions you use most often, you'll love the spelling and grammar checkers and marvel at how easily tables are produced. Word now comes with Word Art, Graph and Equation extensions and allows you to import graphics and text from a huge range of programs. What's more, if you're a WordPerfect user, you can even insert WordPerfect commands. Mail merge, printing envelopes, printing labels, preformatted forms for fax and much more, Word makes it ever so easy! Requires Windows 3.0 or later. 2.0Mb RAM minimum.

5.25" Version Cat X-9733  
3.5" Version Cat X-9953

**\$549**

## Microsoft Excel For Windows



This popular spreadsheet program is easier, more intuitive and puts some of the most powerful analytical tools at your fingertips. You can create one-step charts, stunning reports and presentations in just minutes! Excel lets you link and combine unlimited spreadsheets, format large worksheets and access stunning 3-D

charts. Analysing your data and work has never been easier with Excel's fast recalculation functions and the ability to access information from many different sources. Under Windows you can view multiple worksheets on-screen and view worksheets while running other applications. Requires Windows version 3.0 or later, 2Mb RAM minimum.

5.25" Version Cat X-9774  
3.5" Version Cat X-9769

**\$599**

## WordPerfect For Windows



A popular choice! All your most often-used features, macros and functions are right before your eyes and instantly accessible with just a click of your mouse. WordPerfect bars can be created, customised and saved for each type of document. Tables, equations, lists and columns are easi-

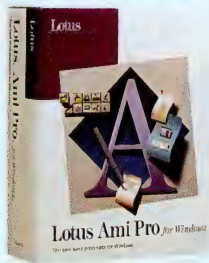
er than ever to create, edit and modify. In addition, it has a spell-checker (Macquarie Dictionary), thesaurus, grammar-checker, Quick Finder text retrieval and Adobe Type Manager. Also features "Object-Linked Embedding", and is 'mail enabled' for multiple users. Plus, it has merge and style features. With WordPerfect for Windows, everything is easier and faster to access, including columns, tables, styles, tabs and fonts. Requires Windows 3.0 or higher and 2Mb RAM.

5.25" Version Cat X-9828  
3.5" Version Cat X-9827

**\$495**



## Lotus 1-2-3 for Windows With AMI PRO & Organiser!



The world's most popular spreadsheet program is now even better! This award winning program is famous for its flexibility, easy control and integration of text, data, graphs, styles, and colours into one. It lets you organise data on up to 256 worksheets per file, write formulas through multiple

sheets in file, link multiple spreadsheet files and format simultaneously. In addition, it has data regression, recalculation, matrix manipulation plus a wide range of solver and back solver functions. Plus, it now comes with the incredibly powerful word processor AMI PRO, and Lotus Organiser - the ultimate desktop scheduler and planner. It also includes high-impact business graphics, context-sensitive help, up to 200 graph styles, pull-down menus and easy-to-use group icons.

**5.25" Version** Cat X-9391  
**3.5" Version** Cat X-9390

**\$699**



## XTree for Windows V1.5

One of the most powerful disk and file management programs available! File management is made incredibly easy - copy,

delete, move & rename files, create directories and much more. Open and arrange multiple windows to simultaneously view and manage files and directories. "Quick View" files without opening the application, create and extract files from ZIP archives quickly and easily. You can even copy, view, move and manage files between your desktop PC and laptop with XTree Link. XTree is the essential companion to Windows. Requires 2Mb RAM, DOS 3.3 or higher and Windows 3.0 or higher.

**Comes on 3.5" disks.** Cat X-9697

**\$129**



## Victor Charlie

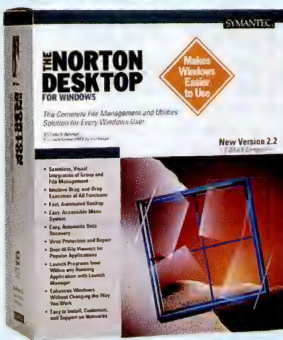
With VC (Victor Charlie) on your system, computer viruses are a thing of the past. Unlike other virus-control programs, VC recognises viral behaviour patterns rather than specific virus signatures. This

allows VC to detect and destroy current (known) viruses as well as those that haven't yet been introduced. It's easy to install, takes only a few minutes to run and uses very little disk space. Protect your valuable data now, before it's too late. **Comes with 5.25" & 3.5" disks.**

Cat X-9970

**\$99**

## Norton's Desktop for Windows V2.2

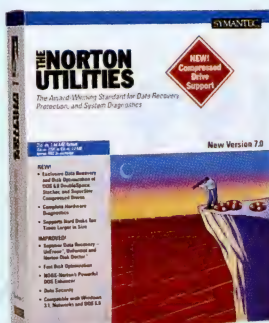


menus and launch applications, virus protection, and fast, reliable automatic backup. There's also an auto-scheduler with pop-up reminders - it'll even run a program for you at a pre-set time! Its data recovery and disk repair tools including unerase and unformat are a must. With speed disk for improved disk performance, disk cache, file compression and file transfer. Compatible with Windows 3.1 & DOS 6.

**3.5" Version** Cat X-5602

A must for all Windows users! Peter Norton is recognised world-wide for his excellent disk and file management systems. Includes a comprehensive file manager, auto menu builder so you can customise

**\$229**



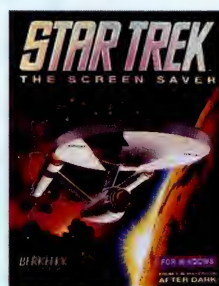
## Norton Utilities 7.0

The all-new version of the ever-popular Norton Utilities provides everything you need to keep your computer system running at peak

performance. You can recover data from accidentally-formatted disks, retrieve lost or erased files from network drives, repair damaged spreadsheet or database files, secure your files from unauthorised access, diagnose your system for maximum performance and more. Norton Utilities 7.0 is also compatible with the new DOS 6.0.

**3.5" Version** Cat X-9698  
**5.25" Version** Cat X-9699

**\$229**



## Star Trek for Windows

The ultimate screen saver for Windows has just beamed down to earth! It also includes a great security system! You get moving pictures and sound from the

greatest sci-fi adventure of all time, 'Star Trek'. Watch Captain Kirk and his crew rescue your monitor from intergalactic 'burn-in'. Star Trek for Windows may not take you where no man has been before, but it's definitely the hero of all screen savers.

**Comes with 2 x 3.5" disk.** Cat X-9380

**\$69**

## CorelDRAW! Graphic Design Powerhouse!



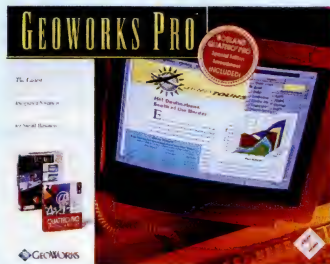
Once you've experienced the sheer power, simplicity and flexibility of CorelDRAW! you won't use anything else. Move, scale, rotate, mirror, skew and duplicate your own freehand or imported graphics and type. You can simulate 3D graphics, blend shapes

together, utilise 150 fully-scalable outline fonts and access up to 4500 ClipArt images. With CorelTRACE you can trace scanned images and then enhance them with CorelDRAW! CorelPAINT gives you full creative control over photographic images, you can make breathtaking charts with CorelCHART and create slide shows with CorelSHOW. CorelDRAW! will change your perception of computer drawing! Requires 4Mb RAM (min), 15Mb (min) disk space, Windows 3.1 and 1BM compatible 386/486.

**5.25" Version** Cat X-9646  
**3.5" Version** Cat X-9645

**\$329**

## Geoworks Pro

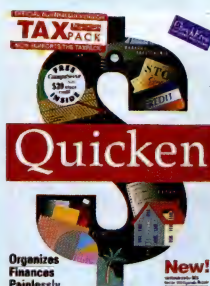


The graphic user interface that works on XTs as well as the latest systems! Geoworks Pro offers great value

for money and includes all the home or business programs you're ever likely to need in one easy-to-manage package. Comes with a fantastic range of programs including: Word processing, spreadsheet, page layout, drawing, directory, disk management, desktop utilities and communications. It's compatible with CGA, MCGA, EGA, VGA, super VGA and Hercules displays.

**5.25" Version** Cat X-9611  
**3.5" Version** Cat X-9612

**\$199**



## Quicken

It's one of the world's most popular financial software packages and it's tailored for Australia! Organises and tracks all of your finances, cheques, credit cards, mortgages, loans, assets - the lot! You can create reports and graphs instantly showing exactly

where your money is going. Powerful new planning calculators make it easy to set goals and plan your financial future. Quicken makes all your financial planning, and tax preparation quicker and easier.

**Windows Version** Cat X-9598  
**DOS Version** Cat X-9599

**\$99**





## Move Your Office Into The Computer Age!

Are you trying to use your state-of-the-art computer on an old-fashioned desk? Take a look at our purpose-designed range of quality computer furniture. It's the tidy, efficient way to organise your computer and peripherals.

### Computer Workstation

Perfect for your PC! A high-quality computer stand designed to accommodate your desktop PC plus accessories, allowing you to keep your equipment in a neat, organised manner. As well as looking great, it offers you more than other computer desks: It has a slide-away keyboard drawer so that when you're not using your keyboard, you can slide it under the desktop, keeping it dust-free and out of the road. It also offers separate compartments to place your monitor and printer, protecting them from dust and being knocked around. It's mounted on castors so you can move it with ease. Dimensions: 62(W) x 49(D) x 131(H) cm  
Cat X-3602

**\$199**



### Mini Tower Computer Desk

Slightly larger than the X-3603, this stylish computer desk will solve all your computer worries - keep all your equipment and accessories on a mobile stand. Ideal for either at home or office, it offers space to accommodate your mini-tower case, monitor, keyboard and printer. It includes a special keyboard tray that slides away when you're not using it. Plus, there's room to store your disks and other accessories. Separate compartments give the desk a neat look while also helping you organise your work and protecting your computer's components. Castors make this desk easy to move around. Dimensions: 63(W) x 50(D) x 131(H)cm  
Cat X-3603

**\$229**



### Mouse Pad & Holder

This functional accessory has been specifically designed to complement these 2 DSX computer desks. It fits to the base of the keyboard drawer and rotates to provide an ideal working area for your mouse. Includes mousemat and storage tray. Can be retracted when not in use.

Cat X-3604

**\$30**

As above but without storage tray.  
Cat X-3605

**\$30**

## LOOKING FOR THE LATEST AND GREATEST IN SOFTWARE?

Check the preceding pages for a small sample of our vast software range. For the full picture, visit one of our stores.



### Rain Checks

On the rare occasion that your nearest Dick Smith Electronics store has run out of a current \*advertised line, simply ask for a Rain Check! As soon as the stock arrives (which is never very long), your Rain Check assures you of getting it (or a comparable product) at the advertised price - even if the relevant promotion has ended! At Dick Smith Electronics, come rain or shine, we stand by our word!

\* Rain checks not available where stocks are advertised as limited, discontinued or clearance lines.





### Slimline AM CB With Electronic Tuning!

Elegant styling, compact design and the convenience of push-button tuning in one of the best value CB's available! At just 140 x 30 x 130mm, it doesn't take up much room in the dashboard. Combine the touch control electronic tuning with the bright LED display and channel switching becomes a dream. DOTC approved.

- Push-button electronic tuning
- LED signal strength/power output display
- Built-in noise limiter
- External speaker socket
- All 40 AM channels
- Complete with mic and mounting kit

Cat D-1200

**Only \$89<sup>95</sup>**

### With Push-button Tuning & Scan!

### Super Cheetah MkIII AM/SSB CB

This high-quality CB radio provides the superior range and performance of SSB (Single Sideband). The term 'Easy-to-use' takes on a new meaning with push-button channel selection, scanning facility, and a front panel design that allows you simple selection of virtually every option. There's also an in-built SWR meter and emergency Channel 9 switch in a superbly-designed and built package. Just take a look at the features! It comes complete with microphone and mounting hardware. DOTC approved.

- Push-button Tuning and Scan.
- SWR, receive signal, RF output meter
- Direct access to emergency channel 9
- Separate Volume, RF gain, Squelch and Clarifier for ease of use.
- Covers all 40 channels on AM, LSB & USB
- PA facility (requires optional speaker)
- Includes mic, mounting hardware and instruction manual

Cat D-1705

**\$219**



### PEARCE-SIMPSON

### Compact PRO 510XL AM CB

The latest version! Very high quality, reliability and exceptional value make the Uniden PRO 510 a popular choice among avid CBers. You only have to use the PRO 510 once, to realise the outstanding performance and build quality. A full range of advanced features are packed into this compact 115 x 35 x 167mm unit, and you can mount it under most dashboards with ease. DOTC approved.

- Switchable noise limiter to reduce ignition noise
- Front panel mic socket for tight installations
- Bright LED channel display
- Signal/power output LED meter
- Complete with microphone and mounting hardware

Cat D-1230

**2 year warranty \$119<sup>95</sup>**



**uniden**

### PRO 520XL Deluxe AM CB

You can take it from a pro, the 520XL Deluxe AM CB has all the features and more! The superb design of this rugged CB makes it incredibly easy to operate and it looks great in any dash. There's a one-touch channel nine (emergency) selection, public address facility (optional speaker required), automatic noise limiter, plus separate RF gain, volume and squelch controls. What's more, you get an LED signal strength meter, 7 watt audio output, a Tx indicator and Uniden's two year warranty. It comes complete with mounting hardware and quality microphone. DOTC approved.

- All 40 AM channels with switchable Ch.9 selection.
- Selectable automatic noise limiter to reduce engine noise
- Bright LED channel display
- Separate Squelch, RF Gain and Volume controls
- Public address facility (optional speaker required)
- LED Signal Strength/RF meter

Cat D-1235

**\$139<sup>95</sup>**



**uniden** **NEW '93**

### Uniden Pro-330e Micro AM CB

Finally get that new car and now you find there's nowhere to mount a CB? The sensational Uniden 330e is a totally new concept in CB design that takes up less space and gives more mounting options than ever before. The PRO330e is a full power 40 channel CB built into a push-to-talk microphone. Its small cradle acts as a wiring block to your outside antenna and power source, and can be mounted on the dash or on the hump between the seats (requires a standard mobile telephone mount). Advanced features include: Push-button tuning, emergency channel 9 switch, selectable automatic noise limiter and more!

- Push-button tuning
- All 40 AM channels with switchable Ch.9 selection.
- Selectable automatic noise limiter to reduce engine noise
- Bright LED channel display and Tx indicator
- Separate Squelch and Volume controls

Cat D-1120

**2 year warranty \$149<sup>95</sup>**



**uniden** **NEW '93**





## Uniden PC-122 Compact AM/SSB CB

The very latest version of the super-compact PC-122. With front-mounted microphone socket and a space-saving design, it's ideal when dashboard space is in short supply. It will fit comfortably in most vehicles and is designed to match modern dashboards. DOTC approved. Superior features include:

- LED received Signal and RF output indicators
- Switchable noise limiter for clearer reception
- Separate volume, Squelch, RF gain and Clarifier controls, for easier operation
- Covers all 40 channels on AM, LSB & USB
- PA facility (requires optional speaker)
- Includes mic, mounting hardware and instruction manual.

Cat D-1715

2 year warranty

**\$269**



## Uniden AX144 AM/SSB CB

A proven performer that's both rugged and reliable. It's no wonder the AX144 continues to be a favourite with avid CBers. There's an analogue signal strength and RF output meter, as well as large, well-placed controls which make using it as easy as could be. DOTC approved.

- Direct access to emergency channel 9
- Volume, Squelch, RF Gain, Mic Gain and Clarifier controls
- Covers all 40 channels on AM, LSB & USB
- PA facility (requires optional speaker)
- Dimmer switch for easy-to-read displays both day & night
- Includes mic, mounting hardware and instruction manual

Cat D-1130

2 year warranty

**\$299**



## Uniden PRO 640e AM/SSB CB

The very best in reliable Citizen Band radio! Uniden's stunning modern design provides a Digital Bargraph meter for SWR, received Signal and RF output. Push-button selection with individual illumination on the controls makes it easy to use, even in the dark. DOTC approved.

- Push-button control of noise limiter, SWR, PA facility, Hi-cut and RF attenuation
- Mic gain, Volume, Squelch and Clarifier controls
- LED bargraph meter for received Signal, RF output and SWR
- Direct access to emergency channel 9
- High power 7-watt audio amplifier
- Covers all 40 channels on AM, LSB & USB
- Includes mic, mounting hardware and instruction manual

Cat D-1480

2 year warranty

**\$329**



## Uniden Pro 810e Base Station AM/SSB CB

When you're looking for a base station CB with top-of-the-line performance and features, you can't beat the Uniden Pro 810e for performance or value. The large front-mounted speaker gives superb sound and its front-mounted microphone jack, well spaced controls, large illuminated received Signal/RF output meter and easy-to-read LED channel display make it a pleasure to use. Has an inbuilt AC power supply and it's DOTC approved.

- Designed specifically for desktop use
- Large front-mounted speaker
- Separate volume, squelch, RF Gain & clarifier controls
- PA facility and external speaker provision
- Tx & Rx indicators
- 7-watt audio output
- Inbuilt AC power supply
- Adjustable mic gain control
- Noise blanker switch

Cat D-1485

2 year warranty

**\$479**





## Sea Simba 27MHz AM Marine Transceiver

The Sea Simba 27MHz AM Marine Transceiver offers great value for coastal boaters. It comes with 10 marine-band channels, an automatic noise limiter and a clear LED display showing receive signal/RF output levels and channel numbers. What's more, RF and mic gain controls are provided along with a PTT microphone, while PA (public address) and extension-speaker jacks allow you to add to the capabilities of your Sea Simba.

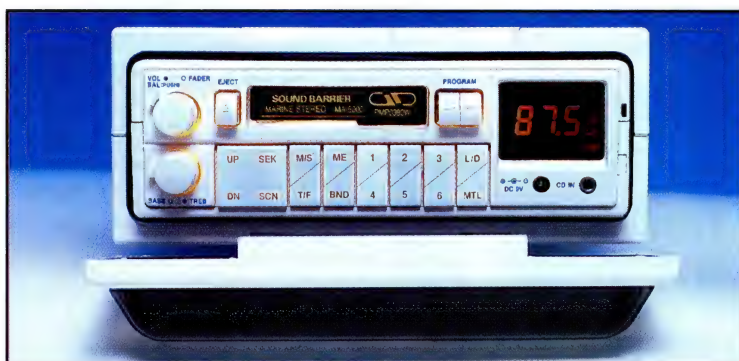
### Specifications

Maximum Output Power: 4 watts  
Sensitivity: 1.0uV for 10dB S/N  
Audio Output: 2.5 watts max.  
Current Drain: 250mA Standby (no signal)  
1.5A transmit max.

**\$99<sup>95</sup>**

Cat D-1718

**PEARCE-SIMPSON**



## Marine Stereo Radio Cassette

Designed especially for extreme applications such as marine and off road use! This high-quality stereo radio cassette has a corrosion resistant case with a clip-on clear-plastic front cover. With an incredible 70 watts (max) power output (35/35W), 12 station memories (6 AM/ 6 FM), fader control, separate bass and treble, push-button tuning, seek and scan tuning, digital frequency/clock display, auto reverse stereo cassette, CD 'In' jack and power jack, pre-out RCA jacks and more.

Cat A-9700

**\$249**

**SOUND BARRIER**  
QUALITY AUTO STEREO SOUND

## Removable Stereo Cassette Radio

The same fantastic features as A-9700, but this one simply slips in and out of its cradle so you can take it with you.

Cat A-9710

**\$299**



## Splash-Proof Radio Cassette Housing

A corrosion resistant, splash proof mounting case that's suitable for most Sound Barrier radios/cassettes (also suits some other brands). It has a clear plastic front cover, so you can still take advantage of the displays.

Cat A-9730

**\$49<sup>95</sup>**



## 2-Way Marine Speaker System

Designed to take the extremes of marine applications, but are also ideal for camper-vans, etc. The die-cast aluminium enclosures are water resistant and fitted with a 100mm woofer and 25mm tweeter. Rated at 100W (max), frequency response of 50-22,000Hz, and impedance of 4- 8 ohms. Complete with mounting brackets.

Cat A-9750

**\$119<sup>95</sup>**



**NEW '93**  
**uniden**

With  
direct dial  
Seaphone  
Microphone

## Uniden 55 Channel VHF Marine Transceiver

The sensational new MC-950 25 watt VHF transceiver covers 55 Australian and international channels, and boasts a superb array of features for outstanding performance. It's supplied with Uniden's new Auto-Seaphone compatible microphone which allows you to make telephone calls from your boat once you're registered with OTC. The microphone provides pushbutton dialling with a backlit keypad, 10 number memories, last number redial, keypad confirmation tones, and DTMF over dialling.

The MC-950 uses a front panel speaker for clearer audio, and the LCD screen has 4 brightness levels for easy day or night viewing. There are 4 scanning modes (normal, timed, memory, group) for quickly locating active channels, plus pushbutton selection for emergency channel 16. Other features include Dual-watch, PA facility (requires optional speaker), selectable 25w/1w output and a weather resistant plastic housing with simple mounting hardware.

### Specifications

RF output power: 25W/1W  
Receiver sensitivity: 0.25uV (12dB SINAD)  
Audio output: 4 Watts (10% dist.)  
Operating Voltage: 13.8VDC nominal  
Current drain: 0.2A Standby  
4.5A (25W output)

Size:

163(w) x 56(h) x 203(d)mm

**\$369**

Cat D-1730

**2 year warranty**

## 3-Way Marine Speakers



Robust, surface-mount 3-way speakers designed to take the hard stuff. They'll handle 80 watts and come with water resistant cover and stainless-steel screws. With a 160mm woofer and balanced-drive dome tweeters for excellent acoustic response. They require 65mm mounting depth.

Cat A-9770

**\$59<sup>95</sup>**



## 5" Horn Speaker

Just the thing to get the PA facility up and running on your marine transceiver! It's weather resistant and rated at 10 watts. Comes complete with fixing bracket and cable.

Cat C-2705

**\$15<sup>95</sup>**



## AM/FM Marine Antenna

This 60" long-range AM/FM antenna is designed specifically for marine and off-road applications. It's weather resistant, robust and comes with a fold-down base, 3.6m coax and plug.

Cat A-7315

**\$59<sup>95</sup>**

## Heavy-Duty AM/FM Antenna

A 6ft heavy-duty AM/FM antenna designed for marine applications. Comes complete with a Polycarbonate fold-down base for added strength and convenience and 3.6m coax with plug.

Cat A-7316

**\$69<sup>95</sup>**



## The kids love them! Toy Walkie Talkies

Cat D-1085

**\$24<sup>95</sup>**  
pr



**digitor**

Two way communication that really works! With easy push-to-talk operation, flexible antenna and removable belt clip, these walkie talkies will keep the kids entertained day after day, after day. They have a medium range (approx 25m over open ground) and there's no licence required. Each unit requires 1 x 9V battery. They make a fantastic gift.



## Hand-held or mobile Uniden PRO-310e CB

A smart and versatile approach to CB radio! Uniden quality with a 2 year warranty in a unit that can be used as a hand-held or as a mobile. It's not short on features and comes with a snap-on battery holder for portable use, as well as a magnetic antenna and DC power cable for mobile use. Requires 8 x AA batteries for hand-held operation. DOTC approved.

Cat D-1124

**\$179<sup>95</sup>**

- All 40 AM channels with switchable Ch.9 selection.
- Hand-held or mobile use
- Pushbutton up/down channel selection
- LED channel display
- Squelch control, automatic noise limiter
- Battery-low indicator
- Carry case for CB and antenna

**uniden**

## Long Range Toy Walkie Talkies

Cat D-1090

**\$69<sup>95</sup>**  
pr

**digitor**

Very high quality toy walkie talkies with a long range of up to 200m (over open ground). They operate on the 27MHz band and use FM transmissions for great audio quality. You don't need a licence to operate them and they come complete with a sturdy telescopic antenna and carry strap. Each unit requires a 9V battery.



## 250MHz Frequency Counter

This versatile 5-digit frequency counter can be used as a standard bench-type unit or can be directly connected to a CB or other low power transmitter for measurement of its transmit carrier frequency. The unit provides two ranges (1-99MHz and 1-250MHz) and can be used with transmitters of up to 20W output. Uses SO-239 sockets for transceiver connections and an RCA socket for low-level inputs. The counter uses a solid metal case for shielding and is supplied with a mounting bracket. Input sensitivity is from 50mV to 20V RMS. Requires 13.8V DC. Cat D-2400

**NEW '93 digitor \$99<sup>95</sup>**

Paired Transmit/Receive Crystals To Suit Many Handheld CBs

27.055MHz Cat D-6056  
27.085MHz Cat D-6057  
27.620MHz Cat D-6062

**\$7<sup>95</sup>** ea

## Digitor CB Extension Speaker

**digitor**

A compact 8-ohm extension speaker ideal for use with most CBs and scanning receivers. Uses a highly-sensitive 57mm plastic-cone 5W speaker for clear audio and comes with mounting bracket, screws and a 1.5m lead fitted with 3.5mm plug. Cat D-2250



**NEW '93 \$19<sup>95</sup>**

## Hands-Free 55MHz FM Transceiver (single unit)

Cat D-1095

**\$69<sup>95</sup>**

**digitor**

This hands-free FM transceiver offers exceptional quality and value for money. It's ideal for local-area or first-time users such as sporting clubs, schools, farmers and bushwalkers and can provide up to 500m range (line-of-sight). Because it operates on a high 55MHz VHF frequency, you're less likely to experience noise or interference from CB or other transmitters. It comes complete with belt clip and an earpiece/tieclasp microphone for voice-activated hands-free operation. Features include selectable push-to-talk or voice activation and a sensitive dual conversion receiver for clearer reception. No license required. Requires a 9V battery.

Cat D-1095

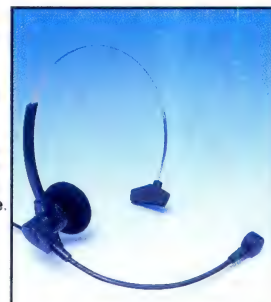


## Headset/Microphone

A lightweight headset/microphone designed to suit the D-1095 55MHz transceiver. Provides improved transmit audio in noisy areas. Simply plugs into the D-1095 transceiver in place of the standard earpiece/microphone.

Cat D-2020

**\$19<sup>95</sup>**



## Uniden MS-100 CB Extension Speaker \$29<sup>95</sup>

A slimline 5W extension speaker for use where only a small mounting space is available. Comes with a flush mounting bracket and lead fitted with a 3.5mm plug to suit most CBs and scanners. Size is 73(W) x 66 (H) x 37(D)mm. Cat D-2275



**NEW '93**

**uniden**



## UH-011 UHF CB

The new UH-011 UHF CB provides quality Communications at a great value-for-money price. Following on from the earlier 001 series, the UH-011 offers superb reliability and is designed to be incredibly easy to operate. For the serious mobile user, it has all the professional features you could want in a UHF CB, including a programmable Duplex facility where you can label certain channels for operation through a repeater station and when you tune to those stations again, the Duplex mode is automatically activated. Plus, bright LED indicators for Tx, Rx and duplex operation as well as a new LED bargraph meter for received signal and power output are provided. All controls are well spaced for fast and easy operation. The UH-011 comes complete with mounting hardware, a quality microphone and Uniden's famous 2 year warranty.

**2 Year Warranty** Cat D-1766 **\$299**

## Uniden Scanning UHF CB

The outstanding Uniden UH-077 scanning CB epitomises the latest advances in UHF CB communications. You'll instantly fall in love with its one-touch open scan as you watch it scan through the entire 40 channels in a lightning fast 3 seconds! Once you've used this amazing CB you'll agree that 'easy to use' takes on a whole new meaning. The front panel tells you everything you need to know at a glance, with an LED display using colour-coded status indicators for Tx, Rx, Group Scan, Open Scan, Call Indicator, and Duplex. It covers all 40 UHF CB channels and has separate volume & squelch controls. There are also other neat features like group scan (scans only those channels you specify), open scan (scans all 40 channels), priority monitoring (listens to one channel while periodically checking another selected channel) and more. It comes complete with mounting hardware, high-quality microphone and DC power lead.

**2 Year Warranty** Cat D-1777 **\$399**



### Specifications

Channels: 40  
Frequency Range: 476.425 to 477.400MHz  
Repeater use: Ch 1 to Ch 8 (TX only)  
Carrier Power: 5 watts max.  
Voltage: 13.8 DC nominal  
Current Drain: Receiver: 600mA max.  
Transmitter: 1.5A max.

Sensitivity: 0.25uV (12dB SINAD)  
Audio Output: 3W max  
Dimensions: 155(w) x 53(h) x 189(d)mm  
DOTC Approved

**uniden**



### Specifications

Channels: 40  
Frequency Range: 476.425 to 477.400Mhz  
Carrier Power: 5 watts max.  
Voltage: 13.8V DC nominal  
Current Drain: Receiver: 600mA max  
Transmitter: 1.3A max

Sensitivity: 0.25uV for 12dB SINAD  
Audio Output: 3 watts max  
DOTC approved

**uniden**

**uniden**

## UH-055 Hand-held Scanning UHF CB

Top-of-the-line performance and features plus the convenience of total portability! This amazing, super compact, 40 channel scanning UHF CB is lightweight (just 500gms inc. battery) and offers many of the features found in the full-sized Sundowner UH-077 mobile UHF CB. It has a backlit LCD screen, selectable high/low RF output, repeater access facilities, sensitive microphone and a removable high-capacity NiCad (600mA/H) battery pack. Scanning features include programmable group scan, open scan, priority channel monitoring and memory protection. Comes complete with belt clip, antenna, carry strap, earpiece, NiCad battery pack and AC charger.

### Specifications

Freq Range: 476.425 - 477.400 MHz (40 channels)  
Carrier output power: 2.5W (high), 0.35W (low)  
Sensitivity: 0.3uV (12dB SINAD)  
Audio Output: 350mW (max)  
Current Drain: 55mA (squelched)  
150mA (max. audio output)  
1.35A (transmit, high power)  
Dimensions: 65(W) x 175(H) x 42(D)mm

**2 Year Warranty**

Cat D-1755 **\$549**





## FT-1000

### Deluxe HF All-Mode Transceiver

The Best of the Best! That's how leading amateurs are describing the sensational Yaesu FT-1000 HF Transceiver. Spectacular performance, power and flexibility have earned the FT-1000 the reputation as being the very best money can buy. Use the unbelievable FT-1000 once and you'll immediately realise that nothing comes close for performance or value.

#### Direct Digital Synthesis (DDS)

Two 10-bit, plus three 8-bit DDSs provide fast lock-up times, while giving cleaner transmissions and improved receiver performance. For digital mode enthusiasts, Digital Synthesized Keying (DSK) provides performance far exceeding traditional FSK & AFSK systems.

#### Higher RF Output Power

Continuously-adjustable output from 20 to 200 watts! 50 watts AM carrier. A heavy-duty AC power supply allows high duty-cycle transmissions and an automatic antenna tuner, with 39 memories, provides fast tuning and automatic recall of antenna matching settings.

#### Dual-Channel Reception

Dual-channel reception with independent VFOs for simultaneous reception and display of two different frequencies - even in different modes and with different IF bandwidths! An optional Bandpass Filter module (BPF-1) allows dual reception with up to 29.9MHz receiver separation on separate antennas.

#### Ultra High-Performance Receiver

All-mode coverage from 100kHz to 30MHz with up to 108dB dynamic range. Selectable 2nd IF filters for 6kHz, 2.2kHz, 1.8kHz, 500Hz and 240Hz. QRM rejection systems include cascaded sharp IF filters, IF Width/Shift controls, IF Notch filter, a variable noise blanker and CW audio peaking filters. A range of 3rd IF (455kHz) crystal filters can be installed for even tighter receiver selectivity.



2 Year Warranty

Cat D-3200 **\$5995**

#### Receiver

Range: 100kHz - 30MHz  
Type: Quad conversion - SSB, CW, AM, RTTY. Triple Conversion - FM  
IF Freq: 73.62MHz, 8.215MHz, 455kHz, 100kHz  
Sensitivity: <0.25uV for 10dB S/N (1.8 - 30MHz), SSB, CW (2.4kHz)  
<0.5uV for 12dB SINAD (29MHz), FM

#### Selectivity:

Button	Modes	Minimum -6dB BW	Maximum -60dB BW
2.4kHz	all exc.FM	2.2kHz	3.8kHz
2.0kHz	all exc.AM FM	1.8kHz	3.6kHz
500Hz	CW,RTTY,Packet	500Hz	1.2kHz
250Hz	CW,RTTY AM (Wide)	240Hz	700Hz
		6kHz	14kHz

Dynamic Range: 108dB typical (@ 50kHz spacing, 500Hz BW, preamp Off)  
Image Rejection: > 80dB (1.8 - 30MHz)  
Audio Output: 2 watts into 4 ohm load, <10% T.H.D.

#### Transmitter

Range: All HF amateur bands (160M - 10M)  
Output: Adjustable up to 200 watts (50W AM)  
Antenna Impedance: 50 ohm nom, 16.5-150 ohms (Max) with tuner.  
Emission Types: LSB/USB (J3E), CW (A1A), FSK (J1D, J2D), AM (A3E), FM (F3E)  
Harmonic Radiation: better than -50dB  
3rd Order IMD: -36dB @ 150W PEP, -31dB @ 200W PEP.

## FT-990

### Yaesu HF All-Mode Transceiver

The incredible FT-990 embodies many of the advanced features and ease of operation of the FT-1000, but in a smaller, more economical package sporting several advances in transmitter and receiver design.

#### Designed For Easy Operation

The front panel puts all frequently-used controls at your fingertips for the easiest of operation. Controls are clearly labelled and the digital display is uncluttered and easy to read. The keypad offers one-touch band selection with 2 independent VFOs per band, while the 90 memories can store data from both VFOs. You'll also appreciate the clarity of the large back-lit analogue meter.

#### Direct Digital Synthesis (DDS)

Two 10-bit DDS and a magnetic rotary encoder provide silky-smooth VFO tuning, pure local oscillator signals, and fast Tx/Rx switching. The DDS is teamed with an extremely low-noise receiver front-end using a PIN-diode controlled RF amplifier followed by a quad-FET ring mixer resulting in a very wide receiver dynamic range. Transmitter signal purity is also enhanced, with circuit noise nearly 90dB down from the carrier.

#### Unique Features

Customizable RF Speech Processor - Lets you shift the IF passband of your transmitted SSB signal for maximum punch with your voice/microphone combination. Digital Audio Filtering - Razor-sharp audio filtering through the use of a dual digital Switched Capacitance Filter (SCF) with independently adjustable selectivity skirts. Packet/RTTY - There are separate interface jacks for a RTTY terminal unit and a Packet TNC, while the mode selection buttons disable the mic automatically in the digital modes.

#### Convenience Features

A highly-efficient AC switch-mode power supply is built-in! It allows high duty-cycle transmissions while keeping the transceiver's weight down to only 13kg.

- An in-built Automatic Antenna Tuner with 39 memories.
- Effective interference rejection is facilitated by IF Shift, IF Notch, IF bandwidth and SCF audio controls.
- An adjustable noise blanker, a 500Hz IF crystal filter and a comprehensive, easy-to-read instruction manual are also supplied.



2 Year Warranty

Cat D-3260 **\$3695**

#### Receiver

Range: 100kHz - 30MHz  
IF Frequency: 47.21MHz, 10.94MHz, 455kHz  
Sensitivity: <0.25uV for 10dB S/N (1.8-30MHz), SSB, CW (2.4kHz)  
<0.5uV for 12dB SINAD (29MHz), FM

#### Selectivity:

Button	Modes	Minimum -6dB BW	Maximum -60dB BW
2.4kHz	all exc.FM	2.2kHz	4.0kHz
2.0kHz*	all exc.AM FM	1.8kHz	3.6kHz
500Hz	CW,RTTY,Packet	500Hz	1.8kHz
250Hz*	CW,RTTY AM (Wide)	240Hz	700Hz
		6kHz	15kHz

Image Rejection: > 80dB (1.8-30MHz)  
Audio Output: 2 watts into 4 ohms load, <10% THD

\*Requires optional filter

#### Transmitter

Range: All HF amateur bands (160m-10m)  
Output: Adjustable up to 100W (25W AM)  
Antenna Impedance: Nom. 50 ohms. 16.5-150 ohms max, with tuner.  
Emission Types: LSB/USB (J3E), CW (A1A), FSK (J1D, J2D), AM (A3E), FM (F3E)  
Duty Cycle: 100% @ 100W (SSB,CW), 50% @ 100W (FM, RTTY, 3 min Tx)  
3rd Order IMD: -36dB typical at 100W PEP, 14.2MHz  
Harmonic Radiation: better than -50dB



## FT-736R Base Station Transceiver

There's no question about it, the FT-736R is the most complete, feature-packed transceiver ever designed for the serious VHF/UHF operator. Whether your interest is in talking through your local repeater, operating SSB DX, or talking to the world via satellite, this high-performance multimode base station transceiver can do it all!

In its standard form, the FT-736R provides 25 watts output on the 2 metre (144-148MHz) and 70cm (430-450MHz) bands in SSB, CW, and FM modes, and can be expanded to cover the 6m (50 - 54MHz) and 23cm (1240-1300MHz) bands by installing optional modules.



**2 Year Warranty** Cat D-2920 **\$2995** With 2m & 70cm Bands

### Some of the FT-736R's many outstanding features include...

Superb digital control with keypad frequency entry, 100 general-purpose memories and 10 full-duplex crossband memories. 2 independent VFOs per band, as well as 2 full-duplex VFOs which can have their transmit and receive frequencies (and modes) tuned independently or synchronously for satellite operation.

Adjustable IF Notch and IF Shift filters, a noise blanker, all-mode VOX and 3 speed selectable AGC. Plus GaAs-FET front ends on 70cm and 23cm, high-stability (+1ppm) PLL reference oscillators, FM discriminator meter and speech processor for SSB. VFO or selectable channel steps on FM, special narrow FM mode, digital input connection for packet TNCs and an efficient switch-mode AC power supply included.

### Specifications

Modes:	LSB/USB (J3E). CW (A1A). FM (F2D, F3E)
Receiver:	50, 144MHz: Dual Conversion Other Bands, Triple Conversion
Sensitivity SSB/CW:	better than 0.2uV for 12dB S+N/N
FM:	better than 0.35uV for 12dB SINAD
Selectivity (-6dB/-60dB)	
SSB, CW:	2.2/4.5kHz
CW-N (optional):	600/1200Hz
FM:	12/25kHz
FM-N:	8/19kHz
Dimensions:	368 x 129 x 286mm (WHD)



## FC-700 Antenna Coupler

The Yaesu FC-700 offers superb performance and unbeatable reliability. This ultra-compact antenna tuner is designed for operation on the 80-10 metre amateur bands (including WARC)! It includes a built-in SWR and power meter (15 and 150 watt scales) and internal 50 ohm 100W dummy load. Once tuned, it provides a 50 ohm load to the transceiver when the antenna impedance is within the 10-250 ohm range.



**2 Year Warranty** Cat D-2917 **\$349**



## Yaesu SP-5 and SP-6 Extension Speakers

Hear what's really happening with these quality speakers which have 12 different audio filtering selections and suit most transceivers and receivers. A selectable high/low pass filter coupled with a large high-sensitivity speaker produces superior audio compared to that of standard transceiver speakers.

Each set has two input terminals, front panel selection and a front panel headphone socket with filtered audio. The SP-5 is suitable for the FT-1000 while the smaller SP-6 suits the FT-990, FT-650, FT-890 and many more. Both speakers can have an optional LL-5 phone patch installed which requires a Telecom line isolation transformer.

**2 Year Warranty**

SP-5 Cat D-3230 **\$249**  
SP-6 Cat D-3265 **\$249**



## LL-5 Phone Patch

The LL-5 phone patch mounts inside the SP-5/6 speakers providing front panel gain controls and an audio level meter. It must be used in conjunction with an external Telecom-approved line isolation transformer.

Cat D-3267 **\$229**



## FL-7000 1.2kW HF Amplifier

Here's the perfect tool for the serious HF amateur operator requiring high output power over the 160m-10m range. The FL-7000 HF solid-state linear amplifier is designed to give automatic band-changing with the FT-1000, FT-990, FT-767GX, or FT-890 transceivers. What's more, it can also be used with just about any HF transceiver by utilising the manual band-change controls on the front panel. A built-in high power automatic antenna tuner allows you to store antenna settings in battery backed memory for fast returning after changing bands.

**2 Year Warranty** Cat D-2549 **\$3695**

### Specifications

<b>Linear Amplifier</b>	
Freq. range:	All HF bands 1.8-30MHz inc. WARC
Input power:	1200W P.E.P.(SSB), 1200W DC (CW, FSK)
Drive power:	Less than 100W for 1200W input
Duty cycle:	SSB 100% for 30 mins CW 100% for 2 mins
Spurious:	Better than -50dB
<b>Auto Tuner</b>	
Matching range:	(1.8-2MHz) 25 to 100 ohms (other amateur bands) 16 to 150 ohms
Insertion loss:	less than 0.5dB when tuned
Maximum power:	600 watts



## Yaesu Prices

Due to fluctuations in exchange rates, prices quoted in this catalogue may vary from actual store prices (which in most cases are lower). For the latest up-to-date prices please check with your nearest store or refer to our regular advertisements in various Amateur radio magazines.



## FT-890 All Mode HF Transceiver

The outstanding FT-890 is a rugged, 100-watt PEP mobile transceiver that covers all HF amateur bands in SSB, CW, FM and AM modes, plus provides continuous reception from 100kHz to 30MHz. Two direct digital synthesizers (DDSs) and a magnetic rotary encoder provide smooth tuning, pure local signals and fast t/r changeover. The low noise receiver front-end uses a parallel FET grounded gate RF amplifier, feeding an active double-balanced quad FET ring mixer for excellent receiver dynamic range performance. The switchable RF amplifier and a 12dB attenuator provide clear copy of even extremely strong signals. Interference rejection is facilitated by the unique 'up-down-up' conversion scheme which provides IF Shift and IF Notch filters.

Four microprocessors provide the simplest possible control! Two independent VFOs per band (20 total) are provided, plus 32 memories which store data from both VFOs. There's also an effective, variable noise blanker, 4-function meter, iambic memory keyer for CW, and an extremely effective, adjustable passband-shifting speech processor which lets you tailor SSB transmitter audio to your own voice and microphone characteristics. The FT-890 weighs less than 6kg, has a thermally switched fan and top panel heatsink. It uses modular design and surface-mount components to ensure highly reliable operation. What's more, there's an optional internal automatic Antenna Tuner (ATU-2) available which can be controlled from the front panel.

### Transmitter

Transmitter Frequency Range: 160m - 10m  
Power Output: Adjustable up to 100 watts (25 watts AM carrier)  
Antenna Impedance: 50 ohms (Nom.) without ATU  
16.5 - 150 ohms with optional ATU (unbalanced)  
Duty Cycle: 100% @ 100 watts PEP, SSB  
Emission Modes: LSB/USB, CW, AM, FM  
3rd Order IMD: -31dB typ. @ 100W PEP., 14.2MHz

### Receiver

Receiver Frequency Range: 100kHz - 30MHz  
Intermediate Frequencies: 70.455MHz & 455kHz, 8.215MHz Notch IF  
Sensitivity: < 0.25uV for 10dB S/N (1.8-30MHz), SSB, CW  
< 0.5uV for 12dB SINAD (29MHz), FM  
Image Rejection (1.8 - 30MHz): 70dB or better  
Maximum Audio Output: 1.5 watts into 4 ohm load, <10% THD  
Dimensions (WHD): 238 x 93 x 243mm



**2 Year Warranty** Cat D-3270 **\$1995**

## ATU-2 Automatic Antenna Tuner



The ATU-2 is an internal automatic antenna tuner for the FT-890 which matches impedances of up to about 3:1. With its own microprocessor and memories, it stores matching settings for fast recall when changing frequency.

Cat D-3272 **\$469**



Cat D-2931 **\$449**

## RMK-747 Remote Mounting Kit

This modification kit allows the front panel of the FT-747GX to be mounted away from the body of the transceiver. Price includes installation on your FT-747GX.

## FM Module

To suit the FT-747GX

Cat D-2932 **\$99<sup>95</sup>**

## Yaesu FT-747GX HF Transceiver

Performance at a very appealing price! The FT-747GX is an all-band HF (160m-10m), all-mode (FM optional) 100-watt powerhouse that's ideal as a first transceiver for the novice, and also makes a great mobile transceiver for the advanced amateur. It's lightweight and compact with an ergonomic control layout for easy operation and, at just 3.3kg, it's light enough to use as a mobile yet sports full professional features. The optional RMK-remote front panel kit provides easy installation where space is limited. The FT-747GX provides selectable coarse and fine-tuning steps, and dual VFOs along with twenty memory channels which are controllable from the mic up/down keys. Wide and narrow bandwidth CW and AM filters are included along with a clarifier, 20dB receiver attenuator and a noise blanker to optimise reception under all conditions. Computer control is also possible through the optional CAT (Computer Aided Transceiver) System.



**2 Year Warranty** Cat D-2930 **\$1399**

### Transmitter

Range: All amateur Bands from 1.8MHz to 30MHz  
Types: LSB, USB, CW, AM  
FM optional  
Power O/P: 100W PEP/DC for SSB, CW, FM opt.  
25W AM carrier

### Receiver

Range: 100kHz to 30MHz continuous  
Types: CW, SSB, AM double conversion  
FM triple conversion  
Sensitivity: 0.25uV SSB/CW >1.5MHz (10dB S+N/N)  
Selectivity: 2.2kHz(-6dB), 5kHz(-60dB) SSB,CW(w),AM(n)  
500Hz(-6dB), 1.8kHz(-60dB) CW(n)  
Audio O/P: 1.5 Watts into 8 ohms  
Image rejection: >70dB 1.5MHz to 30MHz

## FT-650 6m/10m/12m Transceiver

A superb, all-mode mobile transceiver designed for 6m operation with a minimum of fuss. Continuous reception coverage from 24.5 to 56MHz allows you to follow the rising M.U.F. and grab the DX as soon as the band opens, with a powerful 100 watts output on the 24.5, 28, and 50MHz Amateur bands. Three Direct Digital Synthesizers provide low phase noise and clean Tx and Rx performance while particular attention has been made to receiver performance with 6 front-end BPFs and a super low-noise RF amp to provide exceptional sensitivity. For optimal performance, user-selectable tuning steps, manual and automatic IF Notch filters, IF Shift, and IF bandwidth controls are also provided. The front panel layout is well designed and easy to use and provides 105 scannable memories. As well, the FT-650 can also make use of options like the DVS-2 Digital Voice Recorder and the FIF-232C Cat System computer interface.



**2 Year Warranty** Cat D-3250 **\$1995**

### Specifications

Receive: 24.5 - 56MHz  
Transmit: 12m, 10m, 6m Amateur bands  
Modes: LSB/USB, CW, FM, AM  
Transmitter  
Output power: 10 - 100W adjustable (50W AM carrier)  
Duty cycle: 100% @ 100W  
Spurious radiation: < -50dB below 30MHz, < -70dB above 50MHz  
3rd order IMD: -31dB at 80W PEP, 50.1MHz  
Receiver  
Sensitivity: SSB/CW 0.125uV for 10dB S/N  
FM 0.16uV for 12dB SINAD  
IF Frequencies: 13.69MHz, 8.215MHz(ex-FM), 455kHz  
Selectivity: SSB/CW/AM-N 2.4/4.5kHz (-6/-60dB)  
FM-W 15/30kHz (-6/-40dB)  
Image rejection: >60dB (Amateur bands)  
IF notch depth: 40dB or better





## FT-2400H Rugged 2m Transceiver

The ultimate in dependability and reliability! The FT-2400H was built using high-grade mechanical and electronic construction techniques and meets the tough USA MIL-STD-810C shock and vibration requirements, so you know you're getting the highest quality. A one-piece die-cast chassis/heatsink allows three-step output of up to 50 watts without forced air cooling. What's more, fibreglass circuit boards and chip components provide professional-grade reliability. It has a large backlit LCD screen, backlit knobs and 31 tuneable memories (which can store frequency and a four-character name of your choice). A customised microprocessor also provides Auto Repeater Shift to suit Australian Conditions. Two stage track-tuning and a dual FET mixer improve receiver intermod performance. Scanning functions include programmable scan limits, selectable scan resume modes, memory skip, priority monitoring and one-touch recall CALL channel. Seven selectable channel-steps and CTCSS encode are standard features. As well, DTMF selective calling and paging facilities can easily be added via an optional FRC-6 DTMF paging unit. Comes complete with MH-26 hand mic, mobile mounting bracket and DC power lead.

### Specifications

#### General

Frequency Range:  
Channel Steps:  
Current Consumption:

144-148 MHz  
5, 10, 12.5, 15, 20, 25 & 50kHz  
Receive- 400mA  
Transmit- 12 Amp (Hi Power)  
160 x 50 x 180mm (w/o knobs)

#### Dimensions:

#### Receiver

Circuit Type:  
Intermediate Freq:  
Sensitivity:  
Image Rejection:  
Maximum AF Output:

Double Conversion superheterodyne  
21.4MHz & 455kHz  
Better than 0.2uV for 12dB SINAD  
Better than 70dB  
2.0 watts into 8 ohms @ 10% THD

#### Transmitter

RF Output Power:  
Modulation System:  
Cat D-3630

50/25/5 watts (Hi/Med/Low)  
Variable reactance

**\$699**  
2 Year Warranty



## 2m, 70cm & 23cm Mobile Transceivers

Sensational performance, outstanding reliability and amazing ease of control! That's what you get with the FT-212RH 2 metre, the FT-712RH 70cm and the FT-912RH 23cm FM transceivers. The FT-212RH gives 45 watts output over the 144-148MHz range, the FT-712RH gives 35 watts over the 430-450MHz range, and the FT-912RH gives 10 watts over the 1240-1300MHz range. All have a rugged die-cast chassis for superb RF isolation, extensive use of surface-mounted components and a large back-lit LCD with bargraph PO/S-meter. They are ideal mobile transceivers that can also double as easy-to-use base station rigs.

Operating features include 5 selectable tuning steps (4 on the FT-912RH), a total of 21 memories (18 general purpose, one CALL-channel, and 2 sub-band limit memories for band scanning), inbuilt CTCSS encode, as well as a variety of scanning functions. What's more, they all come with a mobile mounting bracket, convenient MH-14A8 microphone and DC power lead.

FT-212RH 2m Mobile

Cat D-3494

**\$599**

FT-712RH 70cm Mobile

Cat D-3330

**\$649**

FT-912RH 23cm Mobile

Cat D-3390

**\$999**



## FT-5200 2m/70cm Mobile Transceiver

The FT-5200 carries the latest innovations in compact cross-band full-duplex and detachable front-panel design for brilliant mobile performance. It has 32 tuneable memories, a built-in antenna duplexer, dual full-frequency LCD screen (with signal strength/power output bargraphs for each band), 8-level automatic display/button lighting dimmer and dual external speaker jacks (one for each band). A thermally-activated fan allows up to 50 watts output on the 2-meter band and 35 watts on the 70cm band. What's more, scanning features include programmable scan limits, selectable scan resume modes, memory skip, priority monitoring and one-touch recall CALL channels. In addition, 6 user-selectable channel steps are provided and a FRC-4 DTMF paging/selcall option lets you program a three-digit ID code so you can be paged by other transceivers, or page up to 5 other stations yourself. An optional YSK-1 remote panel lets you relocate the main rig (under the front seat, for example) and mount the control panel on the dash. The FT-5200 comes with hand-mic, mobile mounting bracket and DC power lead.

### Specifications

#### General

Frequency Range:  
Channel Steps:  
Current Consumption:  
Transmit:

144-148MHz, 430-450MHz  
5, 10, 12.5, 15, 20 & 25kHz  
Receive: 600 mA  
2m, 11.5/4.0 A (high/low)  
70cm, 9.0/3.5 A (high/low)  
140 x 40 x 155mm (w/o knobs)

**\$1399**  
2 Year Warranty

DUE LATE '93

#### Dimensions:

#### Receiver

Intermediate Frequencies:  
Sensitivity:  
Image Rejection:  
Maximum AF Output:

2m, 17.7MHz & 455kHz; 70cm, 22.5MHz & 455kHz  
Better than 0.15uV (12dB SINAD)  
Better than 65dB  
3.0W into 4 ohms @ 5% THD

#### Transmitter

RF Output Power:

2m - 50/5W (high/low)  
70cm - 35/5W (high/low)

Cat D-3310

## YSK-1 Remote Panel Kit

Allows remote mounting of the FT-5200 front panel. **\$99<sup>95</sup>**  
Cat D-3311

## Yaesu SP-4 Extension Speaker

This quality speaker has a built-in switchable noise-filter and comes with a swing-mounting bracket. It handles 3W at 8 ohms and looks smart alongside any RF rig. Comes complete with lead and 3.5mm mono plug.

Cat D-2300

**\$39<sup>95</sup>**



## SB-10 PTT Switch Unit

Allows use of the YH-1 headset with many Yaesu mobile transceivers.

Cat D-3519

**\$59<sup>95</sup>**



## AD-3 Antenna Duplexer

This duplexer allows connection of a 2m and 70cm transceiver to a dual-band antenna, through just one coax run. Can also be used with dual-band transceivers that have separate 2m and 70cm outputs. Maximum power rating is 100 watts and isolation between outputs is approximately 55dB.

Cat D-3303

**\$89<sup>95</sup>**





## FT-530 2m/70cm Handheld

A deluxe 2m/70cm FM dual-band hand-held transceiver that offers easier operation and more features than ever before. The new Yaesu FT-530 expands on previous models by providing a more flexible dual receiver facility with separate volume and squelch controls, allowing you to listen on two frequencies in the same band, or one frequency on both bands! Two VFOs and 41 tunable memories per band are provided, together with keypad or dial frequency entry, seven selectable tuning steps and a one-touch CALL channel. The dual 5.5-digit LCD screen is back-lit for easy viewing and includes many functional indicators plus separate signal/P.O. bargraphs for both receivers. An LCD voltmeter function is provided so you can even monitor your battery's performance under load and estimate remaining battery life.

Other top features include: Inbuilt CTCSS encode/decode with CTCSS scanning, an auto battery saver (ABS) for extended battery charge life, a cross-band repeater facility and an inbuilt clock with alarm and snooze functions. It also has built-in VOX circuitry with adjustable gain/delay settings for use with the optional YH-2 headset, and a user-replaceable Lithium back-up battery. Has DTMF-based selective calling and paging and a 10-memory DTMF auto-dialer. A top panel DC supply jack allows simple transceiver powering and NiCad charging, with RF output in four selectable steps up to 5W at 12V. For enhanced battery life, an Automatic Power-Off function will turn the radio off after a preset period of inactivity, allowing an ultra-low 150uA current consumption so you won't return to find a flat battery. The FT-530 comes complete with an ultra high-capacity 7.2V 1000mA/H NiCad battery, belt clip, carry case and approved AC charger.

Cat D-3620

### Specifications

Frequency range: 144-148MHz  
430-450MHz  
Channel Steps: 5, 10, 12.5, 15, 20, 25, 50kHz  
Voltage Req.: 5.5 to 16V DC  
Current consumption: 150uA  
Auto power off: 16.8mA (dual receive)  
Standby (saver on): 190mA  
Receive: 190mA  
Dimensions: 55(W) x 163(H) x 35mm (D)

Transmitter:  
Power Output: 5, 3, 1.5, 0.5 (at 12V)  
Modulation System: Variable reactance  
Microphone: 2k Ohm condenser  
RF Power Output: 2.0W (2m)  
(with 7.2V 1000mA/H NiCad) 1.5W (70cm)  
Receiver:  
IF Freq: 2m 15.25MHz and 455kHz  
70cm: 44.225 and 455kHz  
Sensitivity: 2m: < 0.158uV  
(12dB SINAD)  
70cm: < 0.18uV  
Selectivity: >60dB  
Intermodulation: >65dB  
Audio Output (at 13.8V): 300mW into 8 ohms

**\$999**

**NEW '93**

Due Late '93

**2-Year Warranty**

## FT-26 2m Handheld

The easy-to-use FT-26 is an ultra-compact FM hand-held with microprocessor controls giving you more features and greater convenience. It's solidly constructed with a die-cast rear case, a high-impact polycarbonate front panel and rubber gasket seals around the controls for added protection against the elements. It has a 6-digit LCD screen and a bargraph meter for signal-strength and power output. A 36mm low distortion speaker provides clear audio, while VOX circuitry provides hands-free operation with the optional YH-2 headset. It also features 53 tunable memories, programmable band-scanning limits, priority monitoring, scan resume and an instant recall CALL channel. As well, it has an inbuilt battery charger circuit, Yaesu's Automatic Battery Saver (ABS) system and an Automatic Power-Off (APO) timer. DTMF-based selective calling and paging facilities let you select a 3-digit ID code which allows you to be paged and also page up to 5 other stations. Complete with a high-capacity 7.2V 700mA/H NiCad battery, belt-clip, carry case and approved AC charger. All in all, a superb ultra-compact transceiver with the latest features for rugged and reliable hand-held FM communication.

Cat D-3600

**\$449**

**2 Year warranty**

### Specifications

General  
Frequency Range: 144-148 MHz  
Channel Steps: 5, 10, 12.5, 15, 20, 25kHz  
Supply Voltage: 5.5 to 16V DC  
Current Consumption:  
Stand-by (with 1-sec save): 19mA  
Receive: 190mA  
Dimensions: 55 x 125 x 33mm  
Receiver  
Sensitivity (12dB SINAD): Better than 0.158uV  
Selectivity: >60dB (adjacent channel)  
Intermodulation: Better than 65dB  
Transmitter  
Power Output: 2.0W at 7.2V  
5.0W at 12V

## Deluxe Handheld FM Paging Transceivers

The superb FT-415 and FT-815 hand-held FM transceivers are compact and rugged with dual-microprocessor control, a range of new high-speed automatic battery-saving (ABS) features and power output which is selectable in up to four levels at 12V. A die-cast rear case, polycarbonate front panel and battery case, plus rubber gaskets seals around controls and connectors, ensure reliability in the most demanding of environments. The display and keypad can both be backlit for easy night-time viewing and the 5.5-16 volt DC supply jack on the top panel can be used to power the transceiver and charge a 7.2V NiCad battery pack. A 36mm speaker provides low distortion audio, while inbuilt VOX circuitry is included for use with the optional YH-2 headset.

Advanced features include two independent VFO's, keypad frequency entry, 41 tunable memories, instant recall CALL channel, and scanning (with programmable subband limits, scan skip/resume and priority monitoring). The FT-415 has Automatic Repeater Shift (Australian version), which activates whenever you tune to a standard repeater subband. Both have DTMF-based selective calling and paging facilities, which allow you to program a 3 digit ID code so other transceivers can 'page' your transceiver. Comes with a high capacity 7.2V, 1000mA/H NiCad battery, belt-clip, carry case and approved AC charger.

FT-415 Cat D-3610

**\$599**

FT-815 Cat D-3615

**\$649**

### Specifications:

Frequency range: FT-415 144-148MHz  
FT-815 430-450MHz  
Size: 55 x 146 x 33mm  
Transmitter:  
Power Output: FT-415 2.0W  
(at 7.2V)  
FT-815 1.5W  
Both models 5.0W at 12V  
Receiver:  
Sensitivity: (12dB SINAD) better than 0.158uV, both models  
Selectivity: >60dB (adjacent channel)





## FT-290R II 2m All-Mode Transportable

Stunning performance, outstanding features and ease of use make the FT-290R II the ideal transceiver for serious field or mobile operations. It covers 144-148MHz and features FM, SSB (USB/LSB), and CW operation with 2.5W or 250mW switchable output power, twin VFOs and 10 memories that store mode and simplex or repeater frequencies. Selectable tuning rates are provided for SSB/CW and FM (SSB- 25/100/2.5kHz and 100kHz; FM- 5/10/20kHz and 1MHz). Mode specific features such as a noise blanker and clarifier control for SSB/CW, plus a full set of functions for FM repeater operation make this unit very simple to operate. It comes with a flexible rubber antenna, an FBA-8 battery holder which takes 9 x 'C' size batteries (standard or NiCad) and a hand-held microphone.

Cat D-2875 **2 Year Warranty** **\$899**

## FL-2025 Amp

Turn your FT-290R II into a powerful mobile/base transceiver with the FL-2025 amplifier. This clip-on RF amplifier will replace the FBA-8 battery holder on the FT-290R II, and boost the transceiver's output to 25 watts. Requires 13.8V DC.

Cat D-2863 **\$249**



## FT-911 23cm Handheld

The incredibly compact FT-911 transceiver provides superb performance on the 23cm amateur band and is designed for quick and easy operation. It has a die-cast casing and rubber gasket seals for added durability. A multi-function back-lit keypad allows fast frequency entry, plus programming of the 49 tuneable memories (and the 10 DTMF memories), setting of the programmable 'power saver' system and a host of other convenient functions.

The microprocessor control system also features 2 VFOs, top mounted rotary dial tuning in 4 selectable tuning steps, a back-lit 7 digit LCD screen with bar-graph PO/S-meter, and a range of scanning features including busy channel, band, or selective memory scanning and priority channel monitoring. VOX (Voice Operated Tx) circuitry is also provided, allowing hands-free operation with the optional YH-2 headset. Comes complete with a long-life 7.2V 1000mAh NiCad battery pack, carry case, belt clip, 'rubber duckie' antenna, and approved AC charger.

### Specifications

Frequency Coverage:	1240-1300MHz
Channel Steps:	10, 12.5, 20 & 25kHz
Supply Voltage:	5.5-15V DC
Power Output:	1W @ 7.2V - 12V
Current Consumption - Stand-by (with 1 sec. save):	11mA
Receive:	150mA
Sensitivity (12dB SINAD):	Better than 0.2uV
Dimensions:	55 x 155 x 32mm

**2 Year Warranty** **\$749**

Cat D-3380

### A. CA-2 Desk Charger Stand

The convenient way to charge your Yaesu handheld battery pack. Simply plug it into your existing plug-pack charger and the battery pack slips into the top. Suits FT-23R, 411 series and 470.

Cat D-3355 **\$49<sup>95</sup>**

### B. PA-6 DC Adaptor/Charger

Allows you to connect 12V DC to your FT-23R, 411, or 470 for 5 watts RF output. Trickle charges your NiCads as well as powering the transceiver. Suits FNB-9, 10, and 14 battery packs.

Cat D-3498 **\$39<sup>95</sup>**

### C. FNB-14 NiCad Battery Pack

A 7.2 volt 1000mAh NiCad battery to suit the FT-23R, 411, 911 and 470. Provides the longest possible operating periods for these radios.

Cat D-3351 **\$99<sup>95</sup>**

### FBA-12 Dry Cell Case

Accepts 6 x AA batteries and suits the FT-26, FT-415/815 and FT-530 transceivers. Not recommended for NiCad batteries.

Cat D-3604 **\$24<sup>95</sup>**

### MMB-49 Mobile Hanger Bracket

A convenient way to position your FT-26, FT-415 or FT-815 in the car. The bracket hangs on the car door for easy access.

Cat D-3605 **\$29<sup>95</sup>**

### F. FNB-26 NiCad Battery Pack

A 7.2 volt 1000mAh NiCad battery to suit the FT-26, FT-415/815 and FT-530 transceivers. This battery pack gives you the longest operating period possible for these radios.

Cat D-3602 **\$99<sup>95</sup>**

### G. FNB-27 NiCad Battery Pack

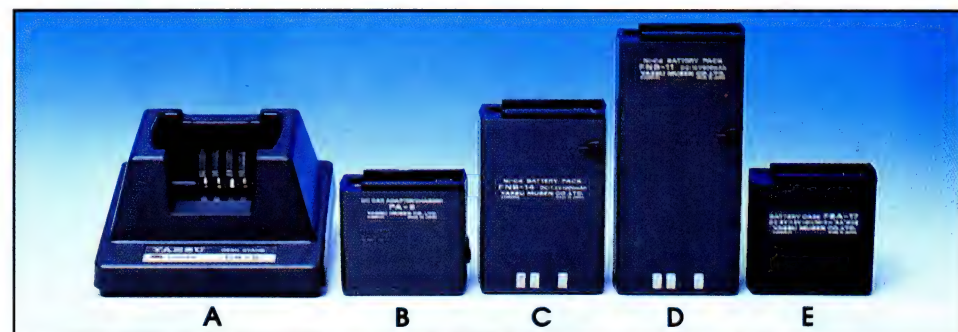
A 12V 600mAh NiCad battery to suit the FT-26, FT-415/815 and FT-530. This pack allows the transceiver to give its full 5 watts RF output.

Cat D-3603 **\$119<sup>95</sup>**

### H. E-DC6 DC Cable

Allows easy connection of your FT-26, 415/815, or 530 to a 13.8 volt supply.

Cat D-3613 **\$9<sup>95</sup>**



### D. FNB-11 NiCad Battery Pack

A 12 volt 600mAh NiCad battery to suit the FT-23R, FT-73R, FT-411 and FT-470, allowing the transceiver to give its full 5 watts RF output.

Cat D-3496 **\$99<sup>95</sup>**

### E. FBA-17 Dry Cell Case

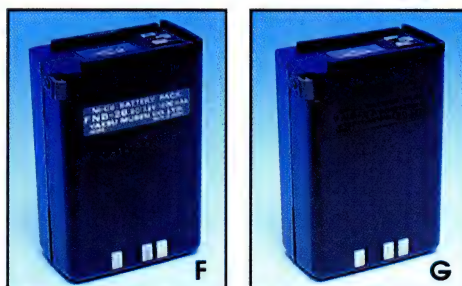
Suitable for FT-23R, FT-411, FT-911 and FT-470 Yaesu handhelds. Accepts 6 x 'AA' batteries. Not recommended for NiCads.

Cat D-3352 **\$19<sup>95</sup>**

### I. E-DC5 Filtered DC Cable

Provides filtered DC when using your Yaesu FT-26, FT-415/815, or FT-530 transceiver in the car. Plugs into the cigarette-lighter socket.

Cat D-3611 **\$39<sup>95</sup>**



## Yaesu FIF-232C CAT Interface

The FIF-232C Computer Aided Transceiver (CAT) interface is a level converter that allows connection of your computer's RS-232C port to many Yaesu transceivers. With the appropriate software (not supplied) it is possible to control many areas of operation and to add many customised functions via your computer.

Cat D-2943

**\$179<sup>95</sup>**



## YM36 Noise Cancelling Mic

A high quality handheld mic from Yaesu. It uses out-of-phase inserts to reduce noise which makes it ideal for use in noisy mobile environments. Comes fitted with an 8 pin plug and has an impedance of 500 ohms.

Cat D-2105 **\$59<sup>95</sup>**



## MH1B8 Handheld Scan Mic

Suits most Yaesu transceivers with scan function. Ergonomic design makes this mic easy to hold for long periods so it's ideal for mobile use. Comes fitted with an 8 pin plug and has an impedance of 500 ohms.

Cat D-2110 **\$59<sup>95</sup>**



## MH12A2B Speaker Mic

Designed especially for late series Yaesu handhelds, it allows greater flexibility while mobile or handheld by combining both microphone and speaker in one unit. Comes with 3.5mm and 2.5mm plugs.

Cat D-2115 **\$69<sup>95</sup>**



## MH18A2B Mini Speaker Mic

A compact speaker/microphone with similar features to the MH12A2B, except in a more compact package that's lighter and easier to handle. Comes fitted with 3.5mm and 2.5mm plugs to suit late series Yaesu handhelds.

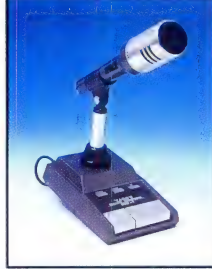
Cat D-2117 **\$59<sup>95</sup>**



## MD1C8 Deluxe Desk Mic

Superbly designed and engineered. This full-featured desktop mic has locking PTT, up/down scanning buttons, switchable frequency response and a removable base. It's beautifully constructed to give many years of reliable service.

Cat D-2125 **\$199**



## YH-1 Headset

Keep both hands on the wheel with this headset mic! It has a hinged mic boom that can be swung out of the way when not in use, an earphone speaker, and is collapsible for easy storage. Fitted with a 3.5mm plug for use with the Yaesu SB series PTT boxes.

Cat D-2195 **\$49<sup>95</sup>**



## YH-2 Headset Mic

A quality headset mic that's similar to the lightweight and robust Yaesu YH-1, but this one is fitted with 2.5mm and 3.5mm connectors to suit most late series Yaesu handhelds.

Cat D-2200 **\$49<sup>95</sup>**



## Universal Dynamic Mic

Designed for AM and SSB transceivers, this quality Japanese mic is supplied with a four-core lead and 4-pin plug that can be wired to suit most transceivers, even those with electronic switching. Nominal 600 ohms impedance.

Cat D-2000 **\$26<sup>95</sup>**



## Noise Cancelling Mic

This quality Japanese mic uses two out-of-phase inserts to achieve its noise cancelling ability. It has a quality PTT switch and coiled lead making it ideal for amateur or CB use. Impedance is 250-600 ohms and frequency response is 300-5000Hz.

Cat D-2010 **\$29<sup>95</sup>**



## Great price! 2 Position COAX Switch

A heavy duty, 2 way coax switch that's suitable for Amateur, CB or commercial applications. It's well constructed with a die cast case and can handle up to 2KW P.E.P. or 1kW CW at 30MHz with less than 0.2dB insertion loss.

Cat D-5200 **\$39<sup>95</sup>**



## Quality 2-Way COAX Switch

This high quality Japanese 2 position 50 ohm coax switch is suitable for HF and VHF applications, and uses a self-cleaning contact mechanism to ensure troublefree operation. It offers superb isolation (>70dB @ 200MHz), low insertion loss (<0.1dB @ 1000MHz), and 1kW P.E.P. HF power rating. Revex model S20.

Cat D-5208 **\$69<sup>95</sup>**



## 2-Way N-Type COAX Switch

The Revex S20N is a very high quality 50 ohm N-type coax switch designed for exacting use on frequencies up to 1500MHz. It offers an insertion loss of less than 0.1dB at 1500MHz and uses a self-cleaning contact mechanism to ensure trouble-free operation. Max. power rating is 1kW PEP.

Cat D-5202 **\$99<sup>95</sup>**



## With surge protection 4-Way COAX Switch

A high quality 4-way coax switch featuring rugged die-cast aluminium construction, 2kW P.E.P. (max.) power handling at 30MHz, and only 0.3dB insertion loss. It has an in-built surge suppressor and automatic grounding of all un-used connections..... in conjunction with a 'ground' position on the switch, it helps protect against lightning induced surge damage.

Cat D-5204 **\$89<sup>95</sup>**



## Novice Study Kit

The perfect way to get started in Amateur radio! The novice study kit comes with The Novice Operators Theory Handbook, which makes theory easy to understand, and a Morse Code training tape as well. This fantastic study kit is a great start on your way up to novice standard.

Cat D-7110 **\$19<sup>95</sup>**



## 15 Watt Dummy Load

A coax terminator with superb SWR characteristics. It consists of a heat-resisting ceramic resistor surrounded by an anodised aluminium heatsink, providing less than 1.2:1 SWR DC to 500MHz. It's fitted with a PL-259 plug, has an impedance of 50 ohms and it can handle 15W continuous or 100W for up to 30 seconds.

Cat D-7025 **\$44<sup>95</sup>**



## Toroidal Balun Kit

Make up your own balun or impedance-matching transformer. This kit contains an iron-powder toroid, heavy-gauge insulated winding wire and detailed instructions. When used in a 1:1 52 ohm configuration, it can handle up to 2kW PEP with a minimal insertion loss. Ideal for antennas up to 30MHz, or you can use it for RFI suppression on your hi-fi gear by wrapping as many turns of your speaker leads as will fit through the core.

Cat D-5350 **\$19<sup>95</sup>**



## 1kW Antenna Balun

Designed to be used as a centre support for dipole or yagi antennas. This 'T' shaped balun has 52 ohm unbalanced input and 52 ohm balanced output. RF input power handling is 1kW P.E.P. max and insertion loss is less than 1dB. It can handle the entire HF band - 3 to 30MHz. RAK model BL-50A

Cat D-5310 **\$59<sup>95</sup>**



## HF Antenna Systems



A superb range of helical HF mobile antennas made for Australian conditions. Simply install a base and attach the whip according to the band you require. Each whip is approximately 1.6m long, appropriately loaded, and features adjustable tip tuning. Maximum power handling is 200 watts. (Recommended base: Cat D-4313. 5/16" heavy duty.)

80m Cat D-4310 **\$49<sup>95</sup>** 40m Cat D-4311 **\$49<sup>95</sup>** 20m Cat D-4312 **\$44<sup>95</sup>**

## 'Rubber Duckie' 2m Handheld Antenna



This classic antenna is just 20cm long with a fast-action BNC connector for attaching to your handheld. It's a robust, yet very flexible, antenna with a reinforced base for extra strength and reliability.

Cat D-4330 **\$26<sup>95</sup>**

## 2m Telescopic 5/8 Wave Handheld



This 144MHz antenna stands just 22cm tall in its retracted 1/4 wave position, yet extends to a full 132cm for excellent 5/8 wave operation. It's made from durable stainless steel, has a sprung base to help protect it from rough handling and a fast action BNC connector for attaching to your transceiver.

Cat D-4333 **\$39<sup>95</sup>**

## 2m/70cm Dual-Band Handheld Antenna



A superb dual-band 2m (1/4 wave) and 70cm (5/8 wave) antenna which is very flexible and performs better than most standard antennas on handhelds. With a frequency coverage of 144-148MHz (unity gain) & 430-440MHz (3.2dB gain). It's just 440mm long, weighs only 50 grams and it also works well with scanner receivers.

Cat D-4334 **\$34<sup>95</sup>**

## 2m/70cm High Gain Handheld Antenna



The Diamond RH770 is a high-gain telescopic dual-band antenna for use on handheld transceivers when maximum range is required. It provides approximately 3dB gain on 2m and 5.5dB gain on 70cm and weighs just 85 grams. Collapses from 93cm to 23cm for easy storage. Uses standard BNC connector to attach to your transceiver.

Cat D-4336 **\$89<sup>95</sup>**

## 2m 5/8-Wave Mobile



At 1.34 metres in length, it's ideal for all 2-metre users. This very flexible mobile antenna has a long-life heat-shrink covering and provides approximately 3dB gain. Comes with a standard 5/16" female threaded socket attached.

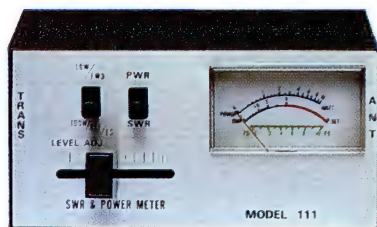
**MOBILE ONE 5 Year Warranty** Cat D-4207 **\$19<sup>95</sup>**

## 70cm Co-Linear Mobile



This mobile whip antenna provides 4dB gain across the 430-440MHz range and may be cut for higher frequency operation. Comes with standard 5/16" thread to suit most UHF bases.

**MOBILE ONE 5 Year Warranty** Cat D-4030 **\$19<sup>95</sup>**



## 27MHz Power/SWR Meter

Tune your CB antenna accurately and easily! This high-quality Japanese meter is suitable for use with all 27MHz CBs and many 28MHz amateur transceivers. The 50 ohm design means that it can be left in-line permanently or, using the antenna supplied, you can take it out for field strength measurements. Comes with comprehensive instructions.

Cat D-1350 **\$49<sup>95</sup>**



With PEP reading!

## HF/6m Power/SWR Meter

A quality wideband SWR/power meter with accurate PEP metering. Manufactured in Japan, it's very well constructed with an all-metal case. Features include a large back-lit meter, 1.8-60MHz coverage with less than 0.1dB insertion loss, 20W, 200W, and 2kW power scales, and LED indicators for Average/PEP operation. Requires 13.8VDC at 200mA. Revex model W502

Cat D-1360 **\$239**

## 1/4-Wave Mobile

A great way to extend the range of handheld transceivers! The Hustler UGM is a compact 1/4-wave magnetic mount mobile antenna fitted with 2.1m of mini coax and a BNC plug. It's supplied with a handy frequency chart to help you select the length best suited to your application (within 140-500MHz).

Cat D-4802 **\$39<sup>95</sup>**

## Hustler RX-2 2m 5/8 Wave Mobile

A quality 2m 5/8-wave magnetic mount antenna for mobile or temporary base station use. Supplied with 4.5m coax (PL259 attached). Made in the USA, it provides 3dB gain with a power rating of 100W maximum and uses a flexible stainless steel radiator to minimise wind loading.

Cat D-4805 **\$49<sup>95</sup>**

## 2m/70cm Magnetic Mobile

The black TM-723M is a slimline, Japanese, dualband, mobile antenna that's supplied with a low-profile magnetic mount and low-loss coax cable. While only 0.7m high, it provides 1.7dB gain on 2m and 4.7dB gain on 70cm and has a conservative maximum power rating of 50W.

Cat D-4812 **\$89<sup>95</sup>**

## 2m/70cm Mobile Antenna

The ST-7500 is a high-quality Japanese dual-band antenna that uses a ground-independent design and a tiltable stainless steel whip structure to provide excellent mobile results. It's just 1m long, yet provides approximately 3dB gain on 2m and 5.5dB gain on 70cm with a maximum power rating of 150 watts. Requires an SO-239 antenna base or SO-239 magnetic base.

Cat D-4810 **\$79<sup>95</sup>**

## 2m/70cm Hi-Gain Mobile

The ST-7800 is our best long-range, dualband mobile antenna providing high gain (4.5dB on 2m and 7.2dB on 70cm), while only 1.5m in length. It incorporates an inbuilt tilt-over mechanism and has a maximum power rating of 150 watts. Requires an SO-239 antenna base.

**BRANER** Cat D-4815 **\$129<sup>95</sup>**



## VHF/UHF Power/SWR Meter

A high quality SWR/Power meter suitable for amateur, UHF CB and commercial applications. High-quality Japanese construction assures you of maximum reliability. It has an all-metal case, large meter display, 140-525MHz coverage with less than 0.3dB insertion loss, and 4W, 20W & 200W power scales. Revex model W540.

Cat D-1370 **\$199**



## High Performance VHF/UHF Base Station Antennas

Our comprehensive range of top-name Diamond and Brainer base station antennas offer outstanding quality and exceptional value. They are stacked colinear types providing high gain, wide bandwidth and a low radiation angle for extended range. The fibreglass reinforced polyester (FRP) outer tubing radome and gasket seals provide excellent all-weather operation, and they are supplied with compact ground-plane radials for a clean radiation pattern. Stainless-steel mounting hardware ensures a long, trouble-free life. Brainer antennas also feature comprehensive locally-written instruction sheets to make installation and set-up easier. All come with a 1 year warranty.



**BRAINER**

### 2m Antenna F-23A

Frequency: 144 - 148MHz  
Gain: 7.8dB  
Max. Power: 200W  
Length: 4.53m  
Type: 3 x 5/8 λ colinear  
Connector: SO-239 socket

Cat D-4850 **\$239**

### 2m/70cm GST-1

Frequency: 144 - 148MHz, 430 - 450MHz  
Gain: 6dB on 2m, 8dB on 70cm  
Max. Power: 200W  
Length: 2.5m  
Type: 2 x 5/8 λ (2m), 4 x 5/8 λ (70cm)  
Connector: SO-239 socket

Cat D-4830 **\$199**

### 2m/70cm GST-3

Frequency: 144 - 148MHz, 430 - 440MHz  
Gain: 7.9dB on 2m, 11.7dB on 70cm  
Max. Power: 200W  
Length: 4.4m  
Type: 3 x 5/8 λ (2m), 7 x 5/8 λ (70cm)  
Connector: SO-239 socket

Cat D-4835 **\$279**

### 23cm Antenna F-1230A

Frequency: 1260 - 1300MHz  
Gain: 13.5dBi  
Max. Power: 100W  
Length: 3.06m  
Type: 25 x 1/2 λ co-linear  
Connector: N-type socket

Cat D-4870 **\$279**

## Medium power Transmitter Low Pass Filter



The Shinwa low-pass filter helps reduce TV interference caused by HF transmitters. It's ideal for CBers and amateurs as it handles up to 500W PEP. Cut-off is around 30MHz with a maximum attenuation of approximately 50dB at 100MHz and insertion loss of only 0.7dB.

Cat D-7080 **\$49<sup>95</sup>**

## Diamond D-130J Discone Antenna

This high-quality Japanese discone antenna covers the frequency range 25-1300MHz and comes complete with mast-mounting hardware and instructions. It's easy to assemble and install, while the extensive stainless-steel construction makes it extremely durable. A wide frequency coverage means that it's ideal for use with scanning receivers, as well as transmitters up to 200W PEP for the 6m, 2m, 70cm and 23cm amateur bands.



Cat D-4840 **\$179<sup>95</sup>**

## 2m 1/2 Wave Base Station Antenna

A value for money, Australian-made base station antenna which is 1.69m long and has a single section fibreglass reinforced polyester (FRP) radome for excellent all-weather operation. It covers the 144 - 148MHz range (<1.5:1 SWR) with a maximum power handling of 200W FM and approximately 3dB gain. Fitted with a SO-239 socket mounted into the base. Comes with a 5-year warranty.



Cat D-4820 **\$49<sup>95</sup>**

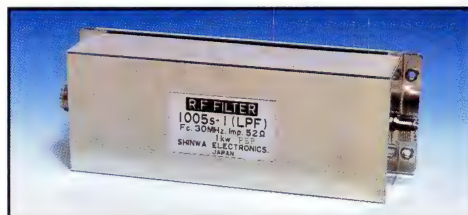
## Economy Morse Key

A bargain-priced Japanese morse key that's ideal for practicing or learning Morse Code. It's a great companion to our Morse Code Oscillator project found in the Funway series.

Cat D-7105 **\$9<sup>95</sup>**



## High power Transmitter Low Pass Filter



A high-power (1000W PEP) filter from Shinwa that helps eliminate stubborn TV interference caused by out-of-band emissions from HF transceivers. Cut-off is around 30MHz with a typical attenuation of around 75dB above 40MHz. Impedance is 52 ohm and insertion loss is only 0.7dB.

Cat D-7082 **\$89<sup>95</sup>**

## Rugged HF 5-Band Trap Vertical Antenna

The rugged 5BTB is a 5-band HF trap vertical which continues the Hustler tradition of quality and performance. It incorporates Hustler's exclusive trap design (25mm solid fibreglass formers, high tolerance trap covers and low loss windings) for accurate trap resonance with 1kW PEP power handling. Wideband coverage is provided on the 10, 15, 20 and 40m bands (SWR typically 1.15:1 at resonance, < 2:1 SWR at band edges), with 80kHz bandwidth typical on 80m at less than 2:1 SWR. An optional 30m resonator kit can also be installed without affecting operation of the other bands. High strength aluminium and a 4mm (wall thickness) extra heavy-duty base section guarantee optimum mechanical stability. Plus, it has stainless-steel clamps and hardware to guarantee a long, trouble-free life. At just 7.65m, the 5BTB can be ground mounted (with or without radials, although radials are recommended), or it can be mounted in an elevated position with a radial system. Unlike other antenna designs, the 5BTB can be fed with any length of 50-ohm coax cable.



Cat D-4920 **\$349**

## 30m Resonator Kit

Adds 30m coverage to the 5BTB and includes all hardware.

Cat D-4921 **\$89<sup>95</sup>**

## VRK-1 Radial Kit

Provides a 5 band ground-plane for above-ground mounting positions.

Cat D-4922 **\$69<sup>95</sup>**

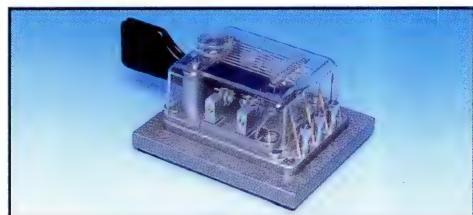
## High-Quality Morse Key



A superbly-designed, high-quality morse key that's manufactured in Japan. It has silver-plated contacts for the best performance and comes complete with a moulded dust-cover for added reliability. Features include thumbscrew connectors for fast cable connection and a non-slip base. Hi-Mound model HK-707.

Cat D-7107 **\$79<sup>95</sup>**

## High-Quality Morse Paddle



Send professional sounding morse code signals by connecting this quality Japanese morse paddle to the electronic keyer in your rig. It uses a solid metal non-slip base and adjustable spring tension to provide the quick response necessary for low fatigue CW. Comes complete with a dust cover and thumb-screw connectors for easy cable connection. Hi-Mound model MK-706

Cat D-7108 **\$109<sup>95</sup>**



## Yaesu FRG-100 Communications Receiver



The sensational FRG-100 high-performance communications receiver combines the latest microprocessor technology and RF design concepts to achieve a level of performance and ease of operation that both serious and casual listeners will really appreciate. It provides extended receiver coverage of the 50kHz to 30MHz range in AM, SSB, CW and FM (optional) modes, as well as an amazing array of new features for even greater enjoyment.

The FRG-100 takes the sensible approach to design by providing the user with easier access to most receiver functions. Receiver modes and the most-used features can be instantly accessed at the push of a button, while the less frequently used functions are kept in the background where they belong. A crisp, back-lit LCD screen shows the frequency down to 10Hz resolution as well as an impressive array of status indicators so you can see, at a glance, what receiver functions are being used. New features include user-programmable tuning steps, 50 tunable memories (which store frequency, mode and filter setting), sharp IF filters for improved SSB reception, a special memory group scanning mode and IF bandwidth selection by mode. You can even customise the beep tone that accompanies each press of a button. Convenience features such as twin 12/24 hour clocks, a programmable on/off timer and 16 pre-programmed international shortwave bands are provided, while an SSB carrier offset

function allows you to customise the receiver's audio performance. It comes complete with detailed instructions and a DC cable for connection to an external power supply.

### Specifications

Frequency range:  
Reception Modes:  
Intermediate frequencies:

Image rejection (1.8 - 30MHz):  
Maximum audio power output:  
Antenna impedance:

Supply voltage:  
Power consumption:  
Dimensions (WHD):  
Weight:

50kHz - 30MHz  
USB, LSB, CW, AM, FM (optional)  
1st - 47.21MHz  
2nd - 455kHz  
60dB or better  
> 1.5W into 4 ohms with <10%THD  
Lo - Z 50 ohms (unbalanced)  
Hi - Z 450 ohms (unbalanced)  
11 - 14VDC  
1.2A maximum  
238 x 93 x 243mm  
3kg (approx)

### Sensitivity (10dB S/N, AM/SSB):

	AM (6kHz)	SSB, CW (2.4kHz)
100 - 250kHz	< 10uV	< 4uV
250 - 500kHz	< 2uV	< 1uV
0.5 - 1.8MHz	< 4uV	< 2uV
1.8 - 30MHz	< 1uV	< 0.25uV

### Selectivity

Modes	Min -6dB BW	Max. -60dB BW
AM	6kHz	18kHz (-50dB)
AM Narrow	4kHz	15kHz (-50dB)
SSB, CW	2.4kHz	4.5kHz
CW narrow (optional)	500Hz	1.8kHz

**NEW '93**

**2 year warranty**

**\$999**  
Cat D-2790



## FRT-7700 Antenna Coupler

A definite 'must have' if your antenna is not low impedance. Not only will it ensure better signal transfer from high-impedance antennas, but it will also help reduce interference from strong out-of-band signals. This antenna coupler ensures the best performance for most types of antennas, it covers 150kHz to 30MHz in 6 bands with a 5-step attenuator and 2 antenna inputs.

**\$169<sup>95</sup>**

Cat D-2843

## Yaesu FRG-9600 VHF/UHF Scanner

The sensational FRG-9600 VHF/UHF receiver carries an impressive array of features and offers exceptional value. Frequency selection is by keypad or dial, and the many selectable scanning functions allow you to sweep across the bands in a variety of ways; busy channel, clear channel, audio scan (avoids 'carrier only' channels), specific band scanning, scanning of the 100 memories and more! It covers the 60-905MHz VHF/UHF spectrum in the FM, AM, and CW modes, with SSB to 460MHz. What's more, with the optional CAT (Computer Aided Transceiver) interface and suitable software, you can control the FRG-9600's many features through your computer.

### Specifications

Frequency:	60-905MHz (up to 460MHz for SSB)	Sensitivity:	FM-n (12dB SINAD) 0.5uV
Bandwidth, -3dB:	FM narrow 15kHz		FM-w (12dB SINAD) 1uV
	FM wide 180kHz		AM-n (10dB S + N/N) 1uV
	AM wide 6kHz		SSB (15dB S + N/N) 1uV
	AM narrow 2.4kHz	Audio Output:	1 watt into 8 ohms <10% THD
	SSB 2.4kHz	Voltage:	DC 12-15V
IFs:	47.754MHz, 10.7MHz, 455kHz	Dimensions:	180 x 80 x 220mm

**2 year warranty**

**\$999**  
Cat D-2825



## Wideband Receiver Pre-Amplifier

The Jim M-75 is a quality wide-band Japanese GaAsFet pre-amp designed to improve the sensitivity of most scanners. It connects between the scanner and antenna, and provides variable gain (-10dB to +20dB) over the 24 to 2150MHz range. Using surface-mount devices and a GaAsFet amp results in a very low 2dB noise figure, while the switchable band-pass filters reduce the chances of interference from strong out-of-band signals. It's 59 x 80 x 30mm (WHD), and requires a 9V battery or external AC adaptor.

**\$199**  
Cat D-3820





## Exclusive to us! Uniden 70 XLT Handheld Scanner

This high-quality handheld scanning receiver from Uniden is superb. What's more, it's incredibly easy to operate, has 20 memories, 8-band coverage and receiver track tuning. It comes with a rechargeable high capacity NiCad battery pack, approved AC charger and durable carry case. A surprisingly powerful unit which is rugged, reliable and fits in your pocket.

### Specifications:

Frequency Coverage: 66-88MHz  
136-174MHz  
406-512MHz  
Sensitivity: 0.4uV 66-88MHz  
0.5uV 136-174MHz  
0.7uV 406-512MHz

2 Year  
Warranty

Cat D-2740 **\$269**



## 200 Memory channels! Uniden 200XLT Scanner

A stunning 10-band hand-held scanner with 200 memory channels, band search and memory scan facility. It has manual keypad entry, memory scan channel lock-out, track tuning and more. It's designed to be as easy as possible to operate and comes with a high-capacity 600mA/H NiCad battery pack and AC charger. What's more, it's backed by a Uniden 2 year warranty.

### Specifications

Freq. Ranges: 66-88MHz  
118-136MHz  
136-174MHz  
406-512MHz  
806-956MHz  
Sensitivity: FM (nom. 12db SINAD)  
66-88MHz 0.3uV  
136-174MHz 0.4uV  
406-512MHz 0.3uV  
806-956MHz 0.6uV  
AM (nom. 12db S/N)  
118-136MHz 0.6uV

Cat D-2810 **\$469**



## Uniden 760XLT Mobile Scanner

The mobile scanner that doubles as a full featured desktop station! Designed for total ease of operation, it has a great array of features like a back-lit digital display, 100 memories, 9 band coverage, automatic search, 5 selectable band search presets, scan delay, and direct keypad channel access. It comes equipped with mounting brackets, DC power cable and for desktop use with a pop-out stand, antenna, and AC adaptor. All this and Uniden's 2 year warranty!

### Specifications

Frequency Range: 66-88MHz  
118-136MHz  
136-174MHz  
406-512MHz  
806-956MHz  
Sensitivity: FM (nom. 12db SINAD)  
66-88MHz 0.3uV  
136-174MHz 0.4uV  
406-512MHz 0.3uV  
806-956MHz 0.6uV  
AM (nom. 12db S/N)  
118-136MHz 0.6uV

uniden

Cat D-2760 **\$469**



## 100 Memory channels Uniden 100XLT Scanner

High quality and superb reliability are hallmarks of the Uniden Bearcat series! The 100XLT will do just about anything you ask. It has features like 9-band VHF/UHF coverage, automatic search, 100 memory channels, priority channel, memory scan channel lock-out, track tuning, and direct keypad channel access. You'd hardly believe it's a hand-held. Supplied with a high capacity 600mA/H NiCad battery pack and AC charger. Comes with a 2 year Uniden warranty.

### Specifications

Frequency Range: 66-88MHz  
118-136MHz  
136-174MHz  
406-512MHz  
Sensitivity: FM (nom. 12db SINAD)  
66-88MHz 0.3uV  
136-174MHz 0.4uV  
406-512MHz 0.3uV  
AM (nom. 12db S/N)  
118-136MHz 0.6uV

Cat D-2750 **\$369**



## AR 1000 Handheld Scanner

An outstanding handheld with an incredibly wide frequency range, very fast search speed and a huge 1000 memories. The memory scan and selection is made easy by arranging the memories into 10 banks of 100. Advanced features include manual or auto scan/search, lock-out, selectable priority channels, selectable search frequency limit, manual override, delay/hold and much more! Comes with an AC charger, antenna, earplug, car power lead and soft case.

### Specifications

Frequency Range: 8 - 1300MHz  
Frequency Steps: Programmable between 5kHz & 995kHz in 5kHz or 12.5kHz multiples  
Sensitivity: FM(n) - 0.5uV or better  
FM(w) & AM - 1uV or better  
IF Frequency: 561.225MHz, 58.075MHz, 455kHz or 10.7MHz  
Receiving Modes: AM, FM (narrow), FM (wide)  
Memory Scan Speed: Approx. 20 channels/sec  
Search Speed: Approx. 40 steps/sec  
Memory Channels: 1000, in banks of 100  
Size: 170 x 35 x 65mm

Cat D-2780 **\$649**



## AR 1500 Handheld Scanner

A unique and compact wide range monitor receiver. It has many of the incredible features of the AR 1000 as well as a BFO (beat frequency oscillator) control for tuning in single side-band (SSB) and morse code (CW). You also get an incredible 1000 memory channels in 10 banks of 100, a special bank of auto search and store memories and priority search facilities. What's more, there's lock-out, selectable priority channels, manual override, delay/hold, DX attenuator switch and more. With AC charger, rechargeable NiCad batteries, antenna, earplug, car lead and soft case.

### Specifications:

Frequency Range: 500kHz - 1300MHz  
Frequency Steps: 5kHz to 995kHz, user programmable in 5kHz or 12.5kHz multiples  
Sensitivity: FM - 0.5uV or better  
AM - 3uV or better  
Modes: AM/SSB, FM (narrow) FM (wide)  
Scan Speeds: Approx 20 channels/second  
Search Speed: Approx 20 steps/second  
Memory Channels: 900 channels plus 100 auto memory channels, total 1000 channels  
Size: 55(w) x 152(h) x 40(d)mm

Cat D-2785 **\$799**



## Light-Duty Base

Standard 5/16" 26TPI threaded-mount in black polypropylene plastic base. Suits loaded 1/4 wave and smaller CB antennas or small VHF whips. Mounting plate includes solder lugs for coax connection.

Cat D-4056

**\$7<sup>95</sup>**



## UHF Antenna Base With Lead

A UHF 5/16" threaded base with 3.6 metres of RG-58C/U coaxial cable and PL-259 plug attached. You can mount it directly, or use it with virtually any of our mounting brackets.

Cat D-4050

**\$19<sup>95</sup>**



## Angled 'Z' Mounting Bracket

A quality stainless-steel 'Z' bracket with an angled base for mounting on a vehicle with a sloping boot-lid. Designed to keep the antenna as close as possible to a vertical position.

Cat D-5155

**\$9<sup>95</sup>**

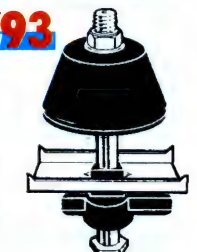


## Solderless Light Duty Base

Reduce antenna installation time! This revolutionary new design allows you to install your coax cable without soldering! Because there's no soldering, this new 5/16" 26TPI antenna base can be re-used in different locations, time and time again.

Cat D-4054

**\$7<sup>95</sup>**



## Dipole Base And Lead Kit

Moulded 5/16" base with 3.6m coaxial lead and PL-259 plug. Fits onto gutter, boot or mirror mount. Patented.

Cat D-4022

**\$19<sup>95</sup>**

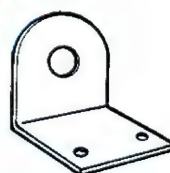


## 'L' Style Mounting Bracket

A stainless-steel 'L' shaped bracket for mounting an antenna base on the inside of the vehicle's boot or bonnet lip. It comes with two stainless-steel self-tapping screws.

Cat D-5160

**\$8<sup>95</sup>**



## VHF/UHF Base

Waterproof design made especially for low loss VHF/UHF use. Cable enters through the bottom of the mount and terminates on the antenna thread.

Cat D-4516

**\$9<sup>95</sup>**



## SO-239 Antenna Base

A waterproof coaxial SO-239 type base for use with PL-259 antennas. It's the ideal base when you often need to remove the antenna.

Cat D-4035

**\$12<sup>95</sup>**



## SO-239 Base/Lead Set

A convenient way to mount a PL-259 type antenna. This quality Japanese SO-239 base is pre-wired with 4m of low loss coax cable, and has a PL-259 already fitted for connection to your transceiver.

Cat D-4052

**\$29<sup>95</sup>**

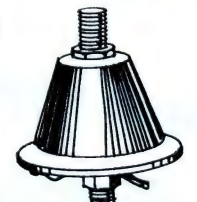


## Heavy-Duty Base

Standard 5/16" 26TPI thread uses a stainless-steel rod and metal base plate for greater strength and reliability.

Cat D-4313

**\$19<sup>95</sup>**

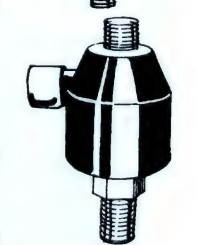


## Extra Heavy Duty Antenna Mount

Uses sturdy 1/2" thread which makes it ideal for larger antennas. Coax input is via a side-mounted SO-239 connector. Can be used with D-4518 adaptor for 5/16" thread antennas.

Cat D-4517

**\$39<sup>95</sup>**



## Antenna Base With Lead

Standard 5/16" threaded base with 3m of quality coax and PL-259 plug attached. Mount it directly, or use it with our gutter mount, 'Z' brackets, Boot mount, or mirror/roof-rack mount.

Cat D-4055

**\$16<sup>95</sup>**



## Universal Mount Magnetic Base

Don't like to drill a hole in your new car? This quality magnetic mount can be used with compact antennas (150g max.) and comes with a Mylar anti-scratch surface, 3.6 metres of coax, and fitted PL-259 plug. Standard 5/16" thread.

Cat D-4514

**\$39<sup>95</sup>**



## SO-239 Magnetic Antenna Mount

A powerful Japanese magnetic-mount for use with PL-259 antennas. It's supplied with 4m of quality coax cable and fitted PL-259 plug. Suits small to medium VHF/UHF antennas such as the ST-7500.

Cat D-4520

**\$59<sup>95</sup>**

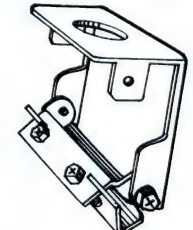


## Light-Duty Gutter Mount

A light duty all stainless-steel, gutter mount. Suitable for use with our D-4516 UHF antenna base when used with smaller antennas.

Cat D-5125

**\$16<sup>95</sup>**

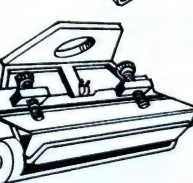


## Low-Profile Gutter Mount

A sturdy gutter mount which reduces the total height of your antenna by mounting it slightly lower than a standard base. Secures to the roof gutter and has variable angle adjustment.

Cat D-5110

**\$18<sup>95</sup>**

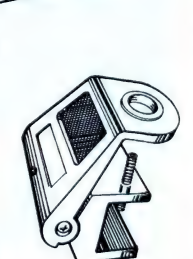


## Heavy-Duty Gutter Mount

A heavy-duty gutter mount to suit most vehicles. Secures to the roof gutter with two screws and has variable angle adjustment.

Cat D-5100

**\$18<sup>95</sup>**

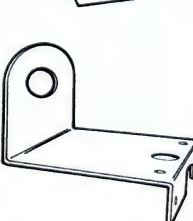


## 'Z' Type Mounting Bracket

A sturdy bracket for attaching the antenna base to the boot lip (The bolts/holes are concealed in the water channel under the boot lid).

D-5150

**\$7<sup>95</sup>**



## Mirror/Boof-Rack Mount

Allows most standard CB antennas to be mounted on a truck style side-mirror or car roof-rack.

Cat D-4512

**\$9<sup>95</sup>**



## Stainless Steel

Cat D-4519

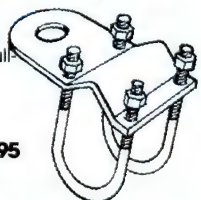
**\$17<sup>95</sup>**

## Bull-Bar Antenna Mount

Designed for mounting small to medium antennas on a 4WD bull bar. Uses a rugged black zinc-coated mounting plate with stainless-steel U-bolts and hardware for a long life.

Cat D-5165

**\$16<sup>95</sup>**



## Boot/Bonnet Mount

Stainless-steel boot or bonnet mount. It grips the top edge of the boot lid with non-scratch bumpers. Stainless-steel screws secure it to the underside of the boot lid. Suits all but the biggest antennas and now it's at a new low price!

Cat D-4515

**\$19<sup>95</sup>**



## Compact Stainless Steel Spring

A lightweight spring which reduces the damage caused to standard helical springs from common everyday hazards such as low carpark roofs and overhanging trees.

Cat D-4500

**\$17<sup>95</sup>**



## Medium Stainless Steel Spring

Suitable for medium to large antennas with a standard 5/16" thread fitting. Stainless steel construction ensures a long life.

Cat D-4509

**\$22<sup>95</sup>**



## Heavy-Duty Spring

Designed for larger antennas. Heavy-duty spring with 1/2" thread to suit D-4517 base.

Cat D-4082

**\$39<sup>95</sup>**



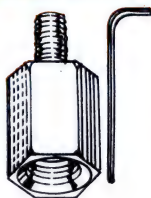


# Mobile 27MHz Antennas & Accessories

## 1/2" To 5/16" Adaptor

Adapts 1/2" female to 5/16" male thread. ie: standard 5/16" thread antenna to D-4517 base.

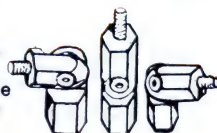
Cat D-4518 **\$12<sup>95</sup>**



## Folding Angle Adaptor

A medium duty folding angle adaptor which allows 180° movement so the base can be mounted at almost any angle while the antenna remains vertical. Suitable for small to medium whips.

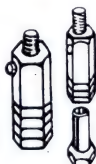
Cat D-4507 **\$14<sup>95</sup>**



## Quick Release Adaptor

Saves your antenna being stolen! This adaptor allows you to remove your antenna from its mount with a quick release button. Adjust antenna SWR after fitting.

Cat D-4501 **\$17<sup>95</sup>**



## Slope Adjuster

Allows you to swivel the antenna up to 30°, so the correct vertical adjustment can be maintained when the base is on an angle. Suitable for small whips.

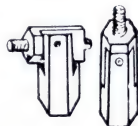
Cat D-4508 **\$14<sup>95</sup>**



## Folding Snap-Down Adaptor

Standard 5/16" threads. Allows CB and similar antennas to be folded down in car parks etc, without removal. Adjust antenna SWR after fitting. Patented.

Cat D-4506 **\$16<sup>95</sup>**



## 1m Coax Patch Lead

A handy coax patch lead with a moulded PL-259 plug on both ends.

Cat D-9010 **\$7<sup>95</sup>**



## 4m Coax Lead

4 metres of quality coaxial cable fitted with spade connectors on one end and a PL-259 plug on the other.

Cat D-9012 **\$9<sup>95</sup>**



## DC Power Leads

DC power leads with in-line fuse holder to suit a variety of old and new CB's.

**3 Pin.** Suits early Midland and late Uniden CBs.

Cat D-9001

**2 Pin.** Suits early DSE and early Pearce Simpson CBs.

Cat D-9006

**\$6<sup>95</sup> ea**



## Egg Insulators

Tough egg insulators for antenna arrays and guy wires.

**Small nylon**  
Cat D-5300

**Medium nylon**  
Cat D-5302

**95¢**

**\$1<sup>95</sup>**



## CB Gutter Grip Antenna

No holes, no tools! This antenna simply clips onto the rain gutter of your vehicle. It has a centre loading coil to increase the effective length, and comes with a coaxial lead and PL-259 plug. Can be installed in seconds!

Cat D-4411

**\$29<sup>95</sup>**



## Magnetic Base CB Antenna

The magnetic base allows you to mount the antenna on the centre of your roof without drilling holes. The centre loading coil means the antenna can be shorter, so you'll have fewer problems with overhanging obstacles. Comes with 3 metres of coax fitted with a PL-259 plug.

Cat D-4412

**\$29<sup>95</sup>**



## 28cm Adjustable Tip Antenna

An extra low profile helps avoid the usual height restrictions associated with most antennas. The adjustable tip ensures accurate tuning and allows you to move the antenna from vehicle to vehicle. Standard 5/16" female termination. Model RMAT

Cat D-4630

**\$19<sup>95</sup>**

5 Year Warranty



## 32cm Mini Whip Antenna

One of the toughest CB antennas around, and it's just 32cm long! Its precision tuned coil is wound onto an almost indestructible fibreglass former and sealed with heat shrink coating. The flexible spiral tuning stub can also be cut for fine tuning. Standard 5/16" female termination. Model RDRM

Cat D-4635

**\$19<sup>95</sup>**

5 Year Warranty



## 3-Way Antenna Switch

If you've got more than one antenna, or perhaps more than one CB, then this switch is what you need! The easy-to-use slide switch puts an end to wiring nightmares and makes antenna selection easy. Handles up to 50 watts at 30MHz.

Cat D-5206

**\$19<sup>95</sup>**



## CB Low Pass Filter

This easy-to-install filter helps reduce TV interference caused by harmonics from CB transceivers. It connects in-line with your CB coax antenna lead and has a cut-off frequency of 30MHz.

Cat D-7086

**\$19<sup>95</sup>**



## CB Antenna Matching Unit

This compact Japanese unit gives optimum power transfer between your CB and an antenna with minor SWR problems. It's ideal when one antenna is used on several vehicles. SWR adjustment is easy and it simply connects between your SWR meter and antenna.

Cat D-5510

**\$26<sup>95</sup>**



## 50cm Mini Whip Antenna

At just 50 centimetres, this ultra-slim, top-loaded helically wound antenna won't give you much wind noise or many height hassles but it will give you superb performance. Comes with a standard 5/16" female thread. Model DX-120FW

Cat D-4073

5 Year Warranty

**\$14<sup>95</sup>**

## 90cm Mini Whip Antenna

A mere 90cm high, but it stands tall for performance. This well-constructed helically wound mini whip comes with a standard 5/16" female thread and uses the easy 'snip to SWR' tuning method. Model DX-136FW

Cat D-4072

5 Year Warranty

**\$15<sup>95</sup>**

## 90cm Bush Bandit Adjustable Tip Antenna

A solid, top-loaded helical antenna with adjustable length tip for easy SWR adjustment. The standard 5/16" female thread will fit most antenna mounts. Model DX-435

Cat D-4420

5 Year Warranty

**\$19<sup>95</sup>**

## Fold Down 90cm Helical antenna

A precision-wound helical whip with Mobile One's exclusive locking snap-down hinge. It's ideal for the many situations where the antenna needs to be folded down to clear overhead obstructions. Standard 5/16" female termination. Model DX-136LSD

Cat D-4090

5 Year Warranty

**\$29<sup>95</sup>**

## 90cm Helical Antenna Pack

This 90cm whip antenna, complete with lead assembly, is an inexpensive way to buy. The pack includes a high-quality, helically-wound antenna, together with a moulded base with 3.6m coaxial lead and a PL-259 plug attached.

Cat D-4027

5 Year Warranty

**\$29<sup>95</sup>**

## 1m 'Superhelical' Antenna

This antenna features a 'Spaced Triaxial Spiroid' winding which produces a continuous field pattern specially tailored for low-profile antennas. It's flexible and can be roof or gutter-mounted. Coated with tough long-wearing polyolefin heatshrink for total weather protection. Standard 5/16" female termination. Model DX-140SH

Cat D-4092

5 Year Warranty

**\$29<sup>95</sup>**

## 1.5m Helical Antenna

A 1.5m constant-diameter whip antenna that fits most standard bases. It's helically-wound with a tough black heatshrink coating and you just snip to adjust the SWR. Standard 5/16" female termination. Model DX-160CD

Cat D-4074

5 Year Warranty

**\$14<sup>95</sup>**

## 1.5m Helical Antenna Pack

The most popular of all our CB antennas, providing high performance in a compact package. Comes complete with a 1.5m helically-wound whip antenna, antenna base and 3.6m coax fitted with a moulded PL-259 plug.

Cat D-4076

5 Year Warranty

**\$24<sup>95</sup>**

## 1.5m 'Superhelical' Whip Antenna

This continuous-loading helical whip is wound onto a rugged fibreglass former with a constant turn winding, and exhibits a radiation pattern similar to a full-sized quarter-wave whip. A tough polyolefin heatshrink covering ensures excellent weatherproofing. Standard 5/16" female termination.

Cat D-4094

5 Year Warranty

**\$32<sup>95</sup>**

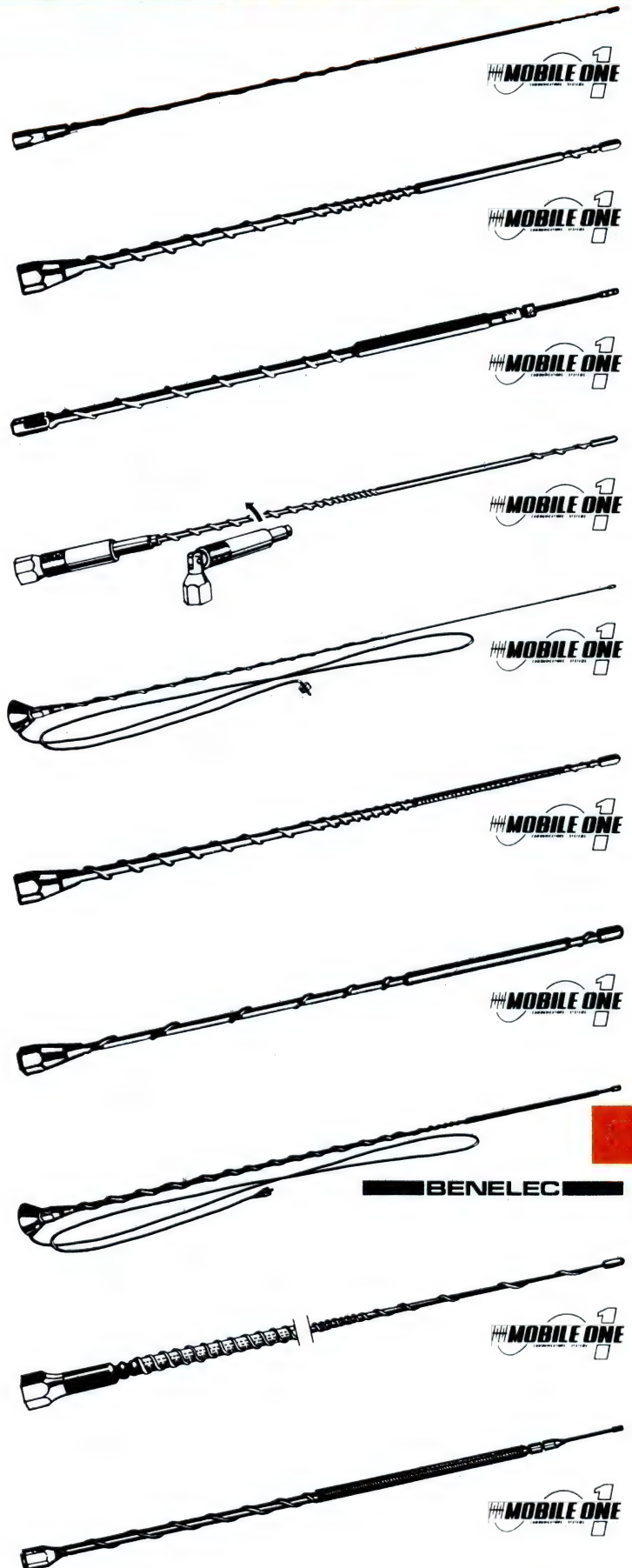
## 1.45m 'Monster Stick' Helical Antenna

There's only one way to handle a monster signal, and that's with a Monster Stick antenna! It's constructed with multi-stranded insulated wire on a sturdy fibreglass rod and coated with a tough polyolefin impregnated heatshrink coating. The Monster Stick provides excellent performance in an antenna that's not too long. Uses the adjustable tip tuning system. Standard 5/16" female termination.

Cat D-4414

5 Year Warranty

**\$39<sup>95</sup>**





# Antennas - Communications

## 1.5m 'Superhelical' 4WD Antenna Pack

The complete medium-duty antenna pack! It contains a 27MHz 1.53m 'Superhelical' medium to long-range antenna, as well as a solidly-constructed stainless steel spring, heavy-duty base, cable and plug. This rugged antenna pack is easy to install and ideal for most 4WDs.

Cat D-4088

5 Year Warranty

**\$69<sup>95</sup>**

## 1.8m 'Skipwhip' Heavy Duty Antenna

Oversized helical windings and a rugged heatshrink coating make the Skipwhip ideal for 4WD adventuring. It's approx. 1.8m long, and the large 1/2" thread will keep it firmly secured to your vehicle. Suits D-4517 Heavy-duty base and D-4082 heavy-duty spring.

Cat D-4418

5 Year Warranty

**\$69<sup>95</sup>**

## 1.8m Heavy Duty Whip Pack

A strong and flexible tapered fibreglass rod, it's wound with copper braid rather than the usual solid wire, and coated with rugged Polyolefin heat-shrink tubing, making this efficient antenna ideal for 4WD track-bashing. A solid spring is attached to the unbreakable mounting base to absorb most of the shock from the antenna. Requires a 1/2" mounting hole. Coaxial cable with a PL-259 plug is supplied.

Cat D-4078

5 Year Warranty

**\$149<sup>95</sup>**

## 2m Extra Heavy Duty Whip Pack

This is our toughest 4WD antenna pack! It's designed for the most demanding off-road environments. Top-loaded for superior efficiency, it uses braided copper covered with tough polyolefin heatshrink for maximum protection. An extra-large spring and rugged mount ensure a long life, while the bottom mounted SO-239 allows easy coax connection. Maximum power rating is 100W.

Cat D-4085

5 Year Warranty

**\$169<sup>95</sup>**

## 27 MHz BASE STATION ANTENNAS

### 1/2 Wave CB Base Antenna

This antenna provides a low angle of radiation for longer range, and solid aluminium construction to ensure a long life. It is easy to erect, easy to SWR in, and best of all, it's not just for CB! Use it at your surf club, boating club, or adapt it for the 28MHz amateur band.

Cat D-4427

5 Year Warranty

**\$79<sup>95</sup>**

### Megatron 27MHz Base Antenna

A ground-independent antenna which provides low SWR and uses an enclosed matching circuit which makes it ideal for use in difficult marine or industrial areas. It can handle up to 1000 watts, stands 5.75m high and has a gain of approximately 3dB. The antenna is at DC ground which helps reduce static noise, and it uses a standard SO-239 coax termination. Comes complete with mast mounting hardware.

Cat D-4430

5 Year Warranty

**\$89<sup>95</sup>**

### 3 Element CB Beam Antenna

Upgrade your base station with this quality, 3 element, Yagi-style beam antenna. It's Australian-made and provides about 7dB gain with over 20dB front-to-back ratio. It uses a gamma match for direct coax feed (no balun required), is simple to assemble, and only requires the use of a light-duty rotator to aim your signal. Mast not included.

Cat D-4428

5 Year Warranty

**\$129<sup>95</sup>**

## UHF CB ANTENNAS

### 1/4 Wave Mobile Antenna

An ultra-flexible 1/4 wave UHF CB antenna made from tough stainless-steel wire in a protective plastic sheath. Install it on any standard 5/16" UHF antenna base.

Cat D-4008

5 Year Warranty

**\$9<sup>95</sup>**

### 4dB Fibreglass Antenna

This popular 3/4 over 1/4 wave colinear antenna uses copper braid over a fibreglass rod to provide outstanding performance out of just 60cm of antenna. Fits any standard 5/16" UHF antenna base.

Cat D-4013

5 Year Warranty

**\$16<sup>95</sup>**





## 4dB Stainless-Steel Whip Antenna

A state-of-the-art stainless-steel whip antenna with a low angle-pattern and at least 4.5dB gain. All components are made of brass and stainless-steel for total protection against the elements, making it ideal for farming, industrial and heavy transport applications. Standard 5/16" female termination.  
Cat D-4006

5 Year Warranty **\$19<sup>95</sup>**

## UHF CB 4dB Antenna Pack

A high-quality stainless-steel 4dB antenna with a UHF antenna base and lead. It's exceptional value, durable and easy to install. Includes 3.6m of high-quality Mil-Spec Coax, fitted with a PL-259 plug, and instructions.  
Cat D-4000

5 year warranty **\$29<sup>95</sup>**

## UHF CB 4dB Antenna Pack

A highly flexible stainless-steel 4dB antenna with UHF base and lead. The whip is black powder coated and uses 2 hex screws to secure it firmly into its ferrule. Includes 3.6m of mil-spec coax fitted with a PL-259 plug, Allen key and instructions.  
Cat D-4002

5 year warranty **\$29<sup>95</sup>**

## 1/2 Wave UHF CB Antenna

A compact, unity-gain antenna that stands only 36cm high. Because it's ground-independent, you can mount it almost anywhere on your vehicle and get a clean, omni-directional transmission pattern. Ideal for vehicles and boats with fibreglass roofs. Chromed brass and flexible PVC construction with a 3.6 metre coax lead.  
Cat D-4020

5 year warranty **\$29<sup>95</sup>**

## UHF Glass-Mount Antenna Pack

A high-quality glass-mounted antenna which looks similar to those used for cellular phones. It's easy to install and doesn't require drilling. Can be mounted on the windscreen or rear window. Frequency range is 390-520 MHz, making it ideal for UHF CB, Amateur or UHF commercial users. It has an average power rating of 100 watts, and comes with 4.5m coax cable and a PL-259 plug.  
Cat D-4019

**\$69<sup>95</sup>**

## 6dB Gain 'Mega Blaster' Antenna

Get high performance and maximum range from your UHF CB with the 'Mega Blaster' antenna. It stands just 1.2 metres high and the multi-element, colinear design gives a solid 6dB gain. Mount it on your vehicle with a standard UHF base (D-4516) for best results. Can also be used as a scanning receiver antenna.  
Cat D-4007

5 Year Warranty **\$49<sup>95</sup>**

## 6.5dB Elevated Feed Mobile Antenna

This tough elevated-feed, ground-independent UHF mobile antenna can be used in virtually any mounting position (provides up to 6.5dB gain when gutter mounted). It's a stainless-steel whip with a black Dura-Coat finish, mounted on a triple chrome-plated brass elevated feed choke. Comes with 3.6m of coax and PL-259. Adjustable over the 470-490MHz range.  
Cat D-4023

**\$69<sup>95</sup>**

## UHF 1/2 Wave Hand-held Antenna

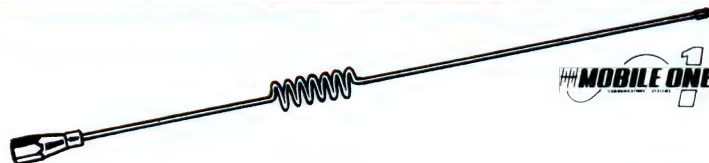
A superb half-wave antenna (3dB gain) which is ideal for hand-held UHF CB's. It's just 26cm tall, highly flexible and has a quality BNC connector for clip-on, clip-off convenience. Also suitable for use with scanning receivers.  
Cat D-4208

5 Year Warranty **\$27<sup>95</sup>**

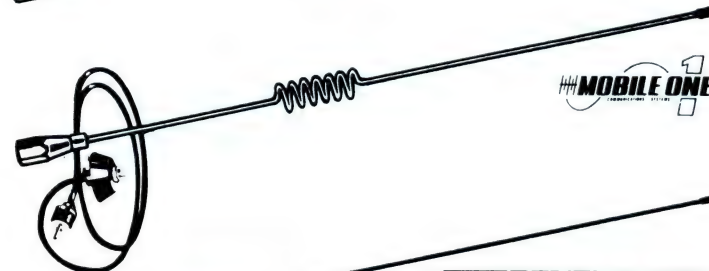
## 6dB Gain Base Antenna

Get great range from your UHF CB with this high gain (6dB), 2.4m high, omni-directional base-station antenna. The high quality fibreglass radome and aluminium tubing construction will ensure a long life. It's fitted with an N-type socket for minimum signal loss and it's great value!  
Cat D-4011

5 Year Warranty **\$69<sup>95</sup>**



**MOBILE ONE**



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**BENELEC**

**'93**



**MOBILE ONE**



**SCALAR**



**MOBILE ONE**



**RFI**



**MOBILE ONE**



**MOBILE ONE**

## Satellite Television

Satellite television is an exciting way to link your television to the world! You can watch television feeds from the USA, France, Asia, New Zealand and the South Pacific via Pacific Region Intelsats. What's more, Aussat provides a selection of domestic programming into areas which have no terrestrial TV

coverage. Satellite Receiving Kits and individual components are available through our mail order division, or call into our North Ryde showroom, in Sydney, for a demonstration of our Intelsat system. For more information, phone your local store or our direct sales division on:

**Free Call 008 22 6610**



# Antennas

## 6dB Gain Miniature Base/Mobile Antenna

A compact 6dB colinear ground-independent antenna designed for use on 4WD's, boats and base stations. It comes complete with a 6dB gain fibreglass radome antenna, heavy-duty spring mount and coax with connectors.

Cat D-4098

5 Year Warranty

**\$139<sup>95</sup>**

## 9dB Gain Base Antenna

One of our best omni-directional UHF CB base antennas! It has a high 9dB gain for improved range, together with rugged aluminium-tube base and fibreglass radome construction for long life. At 3.2 metres tall it uses a ground independent design and has an 'N' type coax socket for minimum signal loss.

Cat D-3005

5 Year Warranty

**\$179<sup>95</sup>**

## MARINE

### Ground Independent 27MHz

A 1.8 metre marine antenna which doesn't require a ground-plane for good performance, making it ideal for wood or fibreglass boats. It's designed for easy whip removal and comes with a swivel deck-mount. Power handling is 25w (max) with typical VSWR of 1.5:1 over the 27.7 to 28MHz range. The antenna may require trimming when used on metal boats. Supplied with 3.6m of coax and PL-259 plug.

Cat D-4069

5 Year Warranty

**\$59<sup>95</sup>**

### VHF Marine Antenna

This 95cm ground-independent antenna has been factory pre-tuned for fibreglass and wooden boats. It covers the VHF marine band with less than 1.5:1 VSWR. Power rating is 25 watts and it provides an omni-directional transmission pattern. A sturdy swivel deck-mount is supplied along with 3.6m of coax and a PL-259 plug.

Cat D-4014

5 Year Warranty

**\$59<sup>95</sup>**

## SCANNER ANTENNAS

### Compact Mobile Scanner Antenna

Improve your portable or mobile scanner's performance with this compact antenna. The 'Scantenna' covers VHF/UHF bands from 70MHz to 500MHz including VHF and UHF commercial, VHF aircraft and UHF CB channels. It's fitted with a standard 5/16" female thread. (D-4516 base recommended).

Cat D-4434

5 Year Warranty

**\$16<sup>95</sup>**

### Wideband Mobile Scanner Antenna

This superb wideband helical-antenna suits most modern scanners and covers the HF/VHF/UHF bands from 21MHz to 900MHz. It's only 90cm long and is fitted with a standard 5/16" female thread (D-4156 base recommended).

Cat D-4436

5 Year Warranty

**\$19<sup>95</sup>**

### Mobile Scanner/Transceiver Antenna

The all new 'Bandspanner' from Mobile One not only covers the 27-1300MHz receive scanning range, but also allows transmissions on the UHF CB and several commercial bands, as well as the Air band. It's an extremely effective mobile scanner antenna providing high efficiency through the use of a wideband UHF whip with helical traps. Standard 5/16" thread.

Cat D-4437

5 Year Warranty

**\$29<sup>95</sup>**

### Base/Portable Scanner Antenna

Increase your scanner's coverage with this quality 1.55m antenna which covers the major scanner bands from 27MHz to 1300MHz. It's easy-to-mount with an inbuilt eye-hook, or it can be mast-mounted with optional clamps. Comes fitted with 3.5m of coax and a BNC plug allowing easy connection to most modern scanners.

Cat D-4432

5 Year Warranty

**\$49<sup>95</sup>**

### Deluxe Base Scanner Antenna

This wide-band base-station antenna provides exceptional performance across the 21 to 900MHz range, making it ideal for use with most scanners. It's 1.82m high, easy-to-mount and comes with stainless-steel hose clamps that allow easy mounting of the antenna to your mast. An SO-239 socket is mounted into the antenna base for easy coax connection.

Cat D-4438

5 Year Warranty

**\$69<sup>95</sup>**

### VHF/UHF Universal Antenna Kit

Exceptional value! This 520mm stainless-steel whip is ideal for mid-band VHF to UHF (approx. 120MHz to 500MHz). It comes with cutting chart and a 5/16" coaxially fed antenna base which fits most mounts. Complete with 3.6m of quality RG58C/U coaxial cable and a PL-259 plug.

Cat D-4025

5 Year Warranty

**\$19<sup>95</sup>**



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## Outstanding value! The DSE Solder Station

The DSE Auto Temp Soldering Station offers you the best value with features and quality to boot! Features fully variable temperature control (from around 200 to 500°C), a temperature meter and has full Energy Authority approval. The station comes complete with lightweight iron holder, cleaning sponge and a comprehensive instruction manual.

Cat T-2000 **\$159**

### Accessories to suit:

Description	Cat No.	Price
Tip Medium Chisel	T-2002	<b>\$6.95</b>
Tip Thick Chisel	T-2004	<b>\$6.95</b>
Tip Fine Conical	T-2006	<b>\$6.95</b>
Element and Barrel	T-2008	<b>\$29.95</b>
Sponge Replacement	T-2010	<b>\$1.95</b>



### Varitemp Iron

One soldering iron that suits a wide range of applications. 240 volt operation with 25 watt capacity makes it a perfect choice as an all-round iron. The temperature control is conveniently placed on the handle and a great range of tips to suit most applications are available. **\$39.95**

#### Spare Tips: Cat T-1350

Medium	Cat T-1351
Large	Cat T-1352
Conical	Cat T-1353

**\$6.95 ea**



### Soldering Blade Tips

5mm Small	T-2039	<b>\$9.95</b>
10mm Large	T-2038	<b>\$9.95</b>

### Chip Parts Removers

2.1 x 1.5mm Small	T-2040	<b>\$9.95</b>
3.2 x 1.6mm Large	T-2041	<b>\$9.95</b>

### Desoldering Tips

Description		Cat No.	Price
20 x 20mm	Box Type	T-2025	<b>\$29.95</b>
17 x 17mm	Box Type	T-2026	<b>\$29.95</b>
16.3 x 16.3mm	Box Type	T-2027	<b>\$29.95</b>
15.5 x 15.5mm	Box Type	T-2028	<b>\$29.95</b>
12.5 x 12.5mm	Box Type	T-2029	<b>\$29.95</b>
23 x 17mm	Box Type	T-2030	<b>\$29.95</b>
7 x 12.5mm	Tunnel Type	T-2031	<b>\$24.95</b>
6 x 10mm	Tunnel Type	T-2032	<b>\$24.95</b>
6 x 5mm	Tunnel Type	T-2033	<b>\$24.95</b>

### Surface Mount Device Adaptors

Adaptor To Suit SMT Tips Cat T-2042 **\$7.95**

### IC & IC Socket Remover

8 Pin	T-2034	<b>\$24.95</b>
16 Pin	T-2035	<b>\$24.95</b>
18 Pin	T-2036	<b>\$24.95</b>
24 Pin	T-2037	<b>\$24.95</b>



### Temperature Controlled! 12V 20 Watt Soldering Iron

Rated at 12V 20-40 watts, this superb iron is fast to heat and fast to recover. Comes with interchangeable long life tip, 2 metre power lead and large insulated battery clips. It's the ideal iron for on-site service and repairs.

Cat T-2100 **\$19.95**



### 30 Watts! Low Voltage Soldering Iron

The go-anywhere soldering iron that just clips on to the car battery or 12V AC/DC (2.5amps or higher) power source. Fast heating, it's lightweight, has a high 30 watt capacity and comes complete with 2 metre lead and alligator clips.

Cat T-1915 **\$9.95**

#### Spare Tips:

Screwdriver type. Cat T-1913 **\$1.95**



### Temperature Controlled Soldering Station

Here's an affordable 16V 310°C soldering station which is ideal for the home hobbyist. The station has a large capacity sponge tray and a built-in stand. The iron operates from 240V mains with a safe 16V output from the transformer and has a positive temperature coefficient heater which maintains the tip at a constant 310°C. What's more, it has a insulated cool-grip handle, long lasting fine tip and delivers maximum heat at the tip... right where you need it. A lightweight, easy to use iron, ideal for working with sensitive electrical components.

Replacement Tip **\$9.95**  
Cat T-1951

Cat T-1900 **\$49.95**



# Weller



**Quality  
Endorsed  
Company**

AS3902 ISO9002  
Lic No. s166 599  
Standards Australia

# CooperTools



## Marksman Soldering Irons

A top quality range of general purpose Marksman Soldering Irons suitable for light range to heavy soldering work. They are mains powered and incredibly efficient with impact and heat resistant handles and replaceable nickel and iron plated tips. They also feature stainless steel barrels and ceramic filled elements.

Watts	Irons	Price
15W	Cat T-1310	<b>\$32.95</b>
25W	Cat T-1400	<b>\$49.95</b>
40W	Cat T-1404	<b>\$54.95</b>
80W	Cat T-1315	<b>\$64.95</b>

### Spare Tips

		Price
Cat T-1312 (For T-1310)	2mm Spade	<b>\$6.95</b>
Cat T-1402 (For T-1400)	4mm S/driver	<b>\$5.95</b>
Cat T-1406 (For T-1404)	6mm Chisel	<b>\$14.95</b>
Cat T-1317 (For T-1315)	6mm S/driver	<b>\$16.95</b>

Note: 120W, 175W & 250W irons are available by order.



## 60W Temperature Controlled Iron

A lightweight 60 Watt iron suitable for working on transistors and printed circuits through to heavy electrical connections. The ceramic filled element provides precise temperature control, minimises heat wastage and has a fast heat and recovery time. With a pretinned 'longlife' iron plated tip.

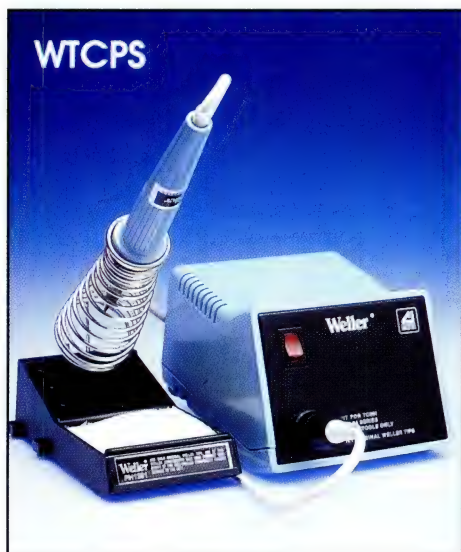
Cat T-1345

**\$110**

Heating Element  
1.58mm Tip 370°C  
3.17mm Tip 370°C  
6.35mm Tip 370°C

Cat T-1346  
Cat T-1347  
Cat T-1348  
Cat T-1349

**\$49.95**  
**\$15.95**  
**\$15.95**  
**\$15.95**



**WTCPS**

## Weller WTCPS Solder Station

Weller is the first choice of many hobbyists, technicians and service people. Design features such as the non-burning silicon rubber soldering pencil lead, long life iron plated tips, lock slots on both sides of the soldering iron stand and wick fed tip cleaning sponge make Weller a name you can trust!

48W Max, 24V Output

Cat T-3000

**\$179**

### Spare Tips:

1.6mm	Screwdriver	(315°C)	T-3002
1.6mm	Screwdriver	(370°C)	T-3003
1.6mm	Screwdriver	(430°C)	T-3004
3.2mm	Single Flat	(430°C)	T-3005
3.2mm	Spade	(315°C)	T-3006
3.2mm	Spade	(430°C)	T-3007
6.01mm	Screwdriver	(315°C)	T-3011
6.01mm	Screwdriver	(370°C)	T-3012
6.01mm	Screwdriver	(430°C)	T-3013
2.0mm	Long S/driver	(315°C)	T-3015
2.0mm	Long S/driver	(370°C)	T-3016
2.0mm	Long S/driver	(430°C)	T-3017
1.6mm	Spade	(370°C)	T-3020
2.4mm	Screwdriver	(315°C)	T-3021
2.4mm	Screwdriver	(320°C)	T-3022
2.4mm	Screwdriver	(430°C)	T-3023
3.2mm	Screwdriver	(315°C)	T-3024
3.2mm	Screwdriver	(370°C)	T-3025
3.2mm	Screwdriver	(430°C)	T-3026

**\$10<sup>95</sup> ea**

### Spare Sponge Power Unit

Cat T-3010 **\$3.95**

### Handle Assembly

Cat T-3018 **\$129**

Cat T-3019 **\$129**

## Solder Station

The ultimate in controlled temperature soldering. A high quality mains powered soldering station. The tip temperature is electronically controlled between 177°C to 454°C and calibrated to within 6°C. A platinum sensor, ensures dynamic response to load variation and a thyristor drive eliminates high voltage spikes or magnetic fields from the tip. Plus, other safety features ensure safe soldering for sensitive and expensive electronic circuits. Complete with power unit and inbuilt transformer, soldering iron, cleaning sponge and detachable iron holder.

Cat T-3050

**\$299**

### Original Weller Tips

		Price
1.6mm	Screwdriver	Cat T-3051 <b>\$19.95</b>
2.4mm	Screwdriver	Cat T-3052 <b>\$19.95</b>
3.2mm	Screwdriver	Cat T-3053 <b>\$19.95</b>

## Mini Soldering & Hot Air Tool

Here's something you'd expect to see in a James Bond movie. A butane operated, mini soldering, brazing and hot air tool. It's small, lightweight and fits easily into your shirt pocket making it ideal for field work, espionage and Her Majesty's Secret Service, etc! Temperature is controlled by varying the gas flow and it comes complete with a 0.5mm tapered needle, hot air tip and aluminium protective cap. Includes operation manual.

Cat T-1335

**\$129**



Hot Blow Tip  
Needle Tip

Cat T-1336  
Cat T-1328

**\$34.95**  
**\$34.95**

## Butane Gas Refill

A 200g can of butane gas. Ideal for refilling the Self Igniting Pyrophen and the Pyrophen Jr. It's quick and easy to use.

Cat T-1339

**\$7<sup>95</sup>**

## Self Igniting Cordless Pyrophen

Take it onsite...anywhere! A totally portable soldering iron that uses regular butane gas (the same as in cigarette lighters) to heat the soldering tip. With one touch ignition, temperature control lever and more, it's designed for easy one-hand use. Operates for up to 3 hours before refilling and it's ready to solder in just 30 seconds.

Cat T-1325



**\$199**

### Tips

Extra tips for the self igniting cordless pyrophen.

Needle Tip T-1338  
Chisel Tip T-1326  
Spade Tip T-1327  
Hot Air Tip T-1329

**\$34<sup>95</sup> ea**



**EC1001D**





## Heat, Cut, Puff And Blow! Butane Soldering Tool

Four fantastic tools in one! This amazing pocket-size butane powered soldering iron is beautifully built and has fully adjustable temperature control (400 - 1300°C). What's more, with the optional tips you can turn it into a handy blowtorch, hot knife & hot air gun. There's also a transparent gas level window so you won't run out of puff in the middle of a job. The unique tip design means that replacement tips are as cheap as chips!

Cat T-1385

**NEW '93 \$39<sup>95</sup>**

## Nimrod/Portasol Gas Refills

Recharge your Butane Soldering Irons quickly & easily with one of these 150g gas refills. Also suitable for many other butane-powered devices.

**Nimrod** N-1085 **\$6<sup>95</sup>** each  
**Portasol** N-1367

## Refillable Butane Soldering Tool

Every tech needs one! Refillable from standard cigarette-lighter butane pressure-packs, this tool will go anywhere you can. It has a safety cut-off switch, is capable of up to 375°C (700°F) and features easily interchangeable screw-in tips (comes supplied with a model C-2 chisel tip). Ignition is by fast, reliable flint sparking and there are no cords, batteries or cartridges to worry about.

Cat T-1450

(Fuel not included)



**NEW '93 \$39<sup>95</sup>**

### Spares:

1/8" Chisel Tip T-1451  
1/8" Fine Tip T-1452  
Hot Knife Tip T-1453 **\$14<sup>95</sup>** each

**Weller/portasol**

### Fits In The Pocket!

## Butane Soldering Iron

A totally portable, butane powered soldering iron which fits easily into your shirt pocket. It's ideal for service people, handymen, technicians, etc. A sensational tool with up to 60 minutes continuous use at full power (equivalent of 60 watts) and adjustable temperature control from 10 to 60 watts (400°C).

Cat T-1370

**\$49<sup>95</sup>**

### Spares:

1.0mm Tip Cat T-1372  
2.4mm Tip Cat T-1369  
3.2mm Tip Cat T-1371  
4.8mm Tip Cat T-1373  
Hot Knife Cat T-1368 **\$18<sup>95</sup>** each

**Weller/portasol**



## Soldering On The Go! Portable Soldering Kit

This butane-powered, temperature-controlled (400-1300°C) soldering iron comes with many accessories: Includes stand, solder (with dispenser), tip cleaner, hot air tip, torch tip and hot knife tip. It's ideal for outdoor work (no power point required) and packs neatly into its own cushioned case. Cat T-1395

### Accessories for Nimrod Irons:

Tip 1mm (S1)	Cat T 1386	<b>\$5.95</b>
Tip 2mm (S2)	Cat T 1387	<b>\$5.95</b>
Tip 3mm (S3)	Cat T 1388	<b>\$5.95</b>
Tip 4mm (S4)	Cat T 1389	<b>\$5.95</b>
Hot Knife (S5)	Cat T 1391	<b>\$12.95</b>
Torch Tip (S6)	Cat T 1392	<b>\$12.95</b>
H/Air Tip (S7)	Cat T 1393	<b>\$12.95</b>
Catalyst (S9)	Cat T 1394	<b>\$6.95</b>

**\$74<sup>95</sup>**

**NEW '93**



## 4 tools in one! 'Pocket' Soldering System

The brilliant Portasol butane powered soldering system is four totally portable tools in one! There's a Soldering Iron, Blow Torch, Hot Blower and Hot Knife. It has the equivalent of 10-60 watts of power and temperature adjustment up to 400°C. Ideal for the hobbyist, handyman or technician.

Cat T-1374

**\$99<sup>95</sup>**

### Spares:

Hot Knife	Cat T-1376
Blow Torch	Cat T-1377
Hot Blow	Cat T-1382
1.0mm Tip	Cat T-1375
2.4mm Tip	Cat T-1378
3.2mm Tip	Cat T-1379
4.8mm Tip	Cat T-1381

**\$18<sup>95</sup>** each

**Weller/portasol**



## Special Function

MAX	232	RS-232 Tx/Rx I.C. (only +5V supply required)
U	664B	1 GHz Prescaler
DS	1488	Quad RS232 Line DriverMC1488 etc
DS	1489	Quad RS232 Line ReceiverMC1489 etc
TCM	5087	DTMF Encoder
MM	5369	CMOS Timebase 50/60Hz & 10/1Hz from 32768Hz
ICL	7106	A-D Converter/3.5 Digit LCD Display Driver
ICM	7216B	Freq/Period Counter, LED Driver Com Cathode
UA	9667PC	Hex Darlington Driver I.C. ULN2003
MC	145026P	ECL Triple Dm. Line Receiver
MC	145028P	(SC41342P) 9-bit Trinary Security Encoder
MC	145436P	(SC41344P) 9-bit Trinary Security Decoder
		DTMF Decoder

Pin No.		Price Each	5 Up Each
16	Z-5369	\$12.95	\$11.00
8	Z-9120	\$9.95	\$8.75
14	Z-5370	\$1.95	\$1.65
14	Z-5371	\$1.95	\$1.65
16	Z-5087	\$4.95	\$4.35
8	Z-5782	\$6.95	\$5.95
40	Z-6300	\$26.95	\$24.25
28	Z-9009	\$99.00	\$72.25
16	Z-5415	\$3.95	\$3.35
16	Z-5425	\$9.95	\$8.75
16	Z-5430	\$9.95	\$8.75
14	Z-5460	\$9.95	\$8.75

## Processors

V20-88MHz	High-Performance 8088 Replacement
Z-80A	4MHz 8-bit CPU
80287-XL	12.5MHz Math Coprocessor /Amstrad AT up to 20MHz
80387SL-25	Maths Coprocessor low-power suits portable 386SX
80387DX-40	Maths Coprocessor for 386DX
80387SX-33	Maths Coprocessor for 386SX

	Price Each	2 Up Each
Z-9110	\$19.95	\$17.95
Z-9100	\$5.95	\$4.95
Z-9112	\$299.00	\$269.00
Z-9114	\$215.00	\$193.00
Z-9118	\$299.00	\$279.00
Z-9119	\$299.00	\$269.00

## RAM & ROM

2732A	4K x 8 EPROM	250ns
27C64-25	8K x 8 EPROM	250ns
2114-12	1K x 4 SRAM	120ns
6116P-4	2K x 8 SRAM	200ns
6264L-15MW	8K x 8 SRAM	150ns
61C65-70P	8K x 8 Fast SRAM	70ns
4164	64K x 1 DRAM	100ns
4464	64K x 4 DRAM	80ns
4464	64K x 4 DRAM	100ns
41256	256k x 1 D/DRAM	60ns
511000	1M x 1 DRAM	80ns
511000	1M x 1 DRAM	70ns
44256	256 x 4 D/DRAM	70ns
SIMM Prime Spec.	1MB x 9-7	70ns
SIMM Prime Spec.	4MB x 9	70ns
SIPP Prime Spec.	1MB x 9	80ns
SIMM 3rd Party	1MB x 9 (Non-Original)	70ns

	Price Each	5 Up Each
Z-9209	\$16.95	\$14.75
Z-9350	\$7.95	\$6.75
Z-9306	\$9.95	\$8.95
Z-9308	\$9.95	\$8.95
Z-9309	\$10.95	\$9.85
Z-9317	\$14.95	\$13.95
Z-9324	\$4.95	\$4.15
Z-9333	\$5.95	\$5.35
Z-9334	\$4.95	\$4.45
Z-9340	\$5.95	\$4.76
Z-9318	\$12.95	\$11.65
Z-9326	\$14.95	\$13.15
Z-9327	\$12.95	\$11.65
Z-9402	\$89.95	\$84.95
Z-9450	\$399.00	\$349.00
Z-9420	\$99.50	\$89.50
Z-9500	\$79.95	\$71.96

## Universal Asynchronous Receive/Transmit ("UART")

AY-3-1015D	Standard UART
8250	UART for PC, XT
8250-B	UART for AT
PC-16450C	UART with Baud Generator, for 286AT
PC-16550 AFN	UART with Baud Generator, for 386

Pin No.		Price Each	5 Up Each
40	Z-9115	\$19.95	\$17.95
40	Z-9220	\$12.95	\$11.00
40	Z-9221	\$19.95	\$17.95
40	Z-9116	\$19.95	\$16.95
40	Z-9117	\$39.95	\$33.95

## Crystals & Resonators

38 kHz suit watches, BA1404, BA1404F Xmit I.C., etc.	HC-13/U	Parallel	Z-6018	\$9.95	\$7.95
3.579545 MHz 'TV Colour Burst', suit MC145436 DTMF Decoders, ICM7206, MM5369, 6809, etc.	HC-49/U	Parallel	Z-6031	\$4.95	\$4.35
2.0 MHz General Purpose suit MPUs	HC-49/U	Parallel	Z-9098	\$4.95	\$4.20
4.0 MHz General Purpose suit Inverters, VCRs, T.V. Pattern Generator, Z80A, 68000, PACE, 6805, 6808, 6809, Z8000, 6801, etc.	HC-49/U	Parallel	Z-9900	\$4.95	\$4.20
10.0 MHz General Purpose suit 8008, 8086, 8088, etc.	HC-49/U	Parallel	Z-9910	\$4.95	\$4.20
303.8 MHz Surface Acoustic Wave Resonator ("SAW") suit Remote Control Transmitters, etc.	3-Pin TO-39 or 4-Pin SIP	—	Z-2771	\$9.95	\$8.95

Case Type	Res'nce Type		Price Each	10 Up Each
HC-13/U	Parallel	Z-6018	\$9.95	\$7.95
HC-49/U	Parallel	Z-6031	\$4.95	\$4.35
HC-49/U	Parallel	Z-9098	\$4.95	\$4.20
HC-49/U	Parallel	Z-9900	\$4.95	\$4.20
HC-49/U	Parallel	Z-9910	\$4.95	\$4.20
3-Pin TO-39 or 4-Pin SIP	—	Z-2771	\$9.95	\$8.95

## PIEZO ALARMS & ULTRASONIC TRANSDUCERS

### Ultrasonic Transducers

Quality Japanese-made, these are great for remote-control, movement sensing and distance measuring. Centre freq.: 40kHz (±1kHz), bandwidth: 6kHz @ -6dB. Cat L-7054

**\$14.95**

### Two Tone Piezo

Emits two tone warbling sound. Inbuilt driver. 40mm (diam) x 23mm. Mounting holes: 46mm. 9-12 volts (40-50mA). Centre frequency 3kHz, sweeps +/- 50Hz. Output approx. 94dB SPL @ 1m. Cat L-7027

**\$8.95**

### Slim Piezo Alarm

Inbuilt driver. 3-30V DC (current 2.5 - 19mA). Output approx. 90dB SPL @ 1m. Centre frequency around 3.6kHz. 17mm (diam) x 14mm high. Cat L-7024

**\$5.50**

### Piezo Transducer

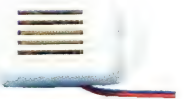
5mm high x 30mm diameter. 3-30V p-p AC. Output approx. 80dB SPL @ 1m. Cat L-7022

**\$2.50**

### Electronic Buzzer

Ideal as local alarm or warning buzzer. Input: 4-15V DC. Output approx. 70dB SPL @ 1m. 23mm(l) x 17mm(w) x 16mm(h). 26mm mounting hole centres. Cat L-7009

**\$2.75**





## HOTRODS

### Affordable Quality From Dick Smith Electronics

Our house brand of easy-to-use and extremely efficient soldering irons. With 240V operation, 370 C operating temperature, long-life replaceable tips and lightweight handles. Approved by electrical authorities, they meet Australian Standard number 3114, they offer exceptional value for money!

**25 watt** Cat T-2300 **\$19<sup>95</sup>**  
Replacement tip: 4mm Conical  
Cat T-2301 **\$3.95**

**40 watt** Cat T-2305 **\$24<sup>95</sup>**  
Replacement tip: 5mm Double Flat  
Cat T-2306 **\$4.95**

**60 watt** Cat T-2310 **\$29<sup>95</sup>**  
Replacement tip: 6mm Double Flat  
Cat T-2311 **\$4.95**

**80 watt** Cat T-2315 **\$34<sup>95</sup>**  
Replacement tip: 7mm Single Flat  
Cat T-2316 **\$5.95**



**Excellent Value!**

**NEW '93**



**Bargain price!**

### De-Soldering Tool

A high capacity de-soldering tool. Ideal for reworking jobs and the removal of solder from electronic circuit components. Designed for easy one-hand use, its tip and barrel are fully removable for easy cleaning.

Cat T-2561 **\$7<sup>95</sup>**



### De-Soldering Pump

A handy, small sized de-soldering tool for repairing P.C. boards and other delicate work. It's lightweight and easy to use with a removable teflon tip. A quality tool designed for one-hand operation.

Cat T-2563 **\$9<sup>95</sup>**



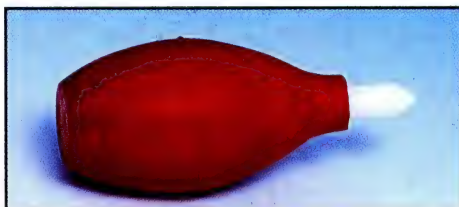
**With anti-static teflon tip!**

### De-Soldering Tool

Lightweight and easy to use. A medium sized tool designed to allow one-hand operation while removing solder from electronic circuits etc. It's easy to clean with an anti static teflon tip and metal barrel.

Cat T-2567 **\$14<sup>95</sup>**

**Replacement Tip** Cat T-2562 **\$1<sup>95</sup>**



### 'Vacu-Bulb' De-Soldering Tool

A quality de-soldering bulb with a Teflon Tip, for easy de-soldering and removal of excess solder. The fluorocarbon material used in the tip means it won't scratch or damage delicate PC boards.

Cat T-2581 **\$4<sup>95</sup>**

**Replacement Tip** Cat T-2564 **\$2<sup>95</sup>**

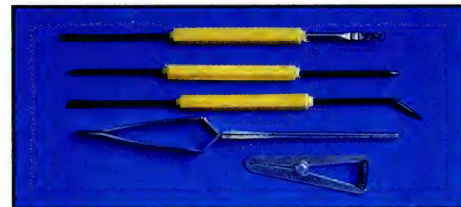


### Heatsink Clip Set

Spring loaded, plier grip clips for heat sensitive components and leads. Made of aluminium for high thermal conductivity, 2 types (one straight, one angled), both are 75mm long.

Cat T-2620 **\$8<sup>95</sup>**

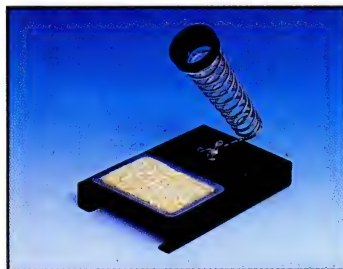
**Replacement Tip** Cat T-2568 **\$4<sup>95</sup>**



### Soldering Aid Set

A complete soldering aid set at a bargain price! Includes a fine-point and slotted end probe, scraper end and wire brush probe, angle scriber & scraper probe, aluminium heatsink and 170mm tweezers. A must for your tool box!

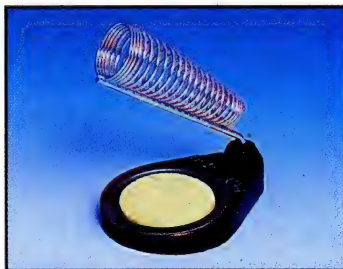
Cat T-2606 **\$7<sup>95</sup>**



### Soldering Iron Stand

A budget, lightweight soldering iron stand which makes working that little bit easier, at a price to suit everyone. Ideal for the amateur, hobbyist, student... even the experts. A sensible and inexpensive way to keep that hot iron out of harms way. Comes with sponge.

Cat T-1303 **\$9<sup>95</sup>**



### Quality Iron Stand

An essential part of anyone's workshop, from Scope. A well balanced and sturdy soldering iron stand with a heavy cast iron base, so you can't knock it over easily. Comes complete with solder sponge.

Cat T-1305 **\$19<sup>95</sup>**



### Exceptional value! PCB Work Station

It's bargain priced and makes working on PCB's much easier! This superbly built stand has a heavy cast iron base for added stability, a magnifying glass and alligator clips to hold the PCB while you're working on it.

Cat T-5715 **\$10<sup>95</sup>**



### With light PCB Helping Hands

It's just like having another set of hands! With alligator clips, a heavy cast iron base and magnifying glass. As well, there's a soldering iron stand, flexible light and solder cleaning sponge. Hold still, take a closer look and see the light with this quality work station.

Cat T-5720 **\$29<sup>95</sup>**



# Solder & Service Aids



## Flux Cored 60/40 Solder

General purpose electronics grade flux cored 60/40 (Tin/Lead) solder that's ideal for most projects and repair work. Available in rolls or economical hobby packs.

### Hobby packs:

0.71mm (22G) Cat N-1636 **\$1<sup>95</sup>ea**  
1.25mm (18G) Cat N-1638

### 200 gram rolls:

1.25mm (18G) Cat N-1619 **\$7<sup>95</sup>ea**  
0.71mm (22G) Cat N-1623

## Solder Paste

This 96/4 (Tin/Silver) solder is lead free and ideal for most metals including stainless steel. It is not recommended for electrical/electronics use. Comes in 7 gram syringe. Cat N-1644 **\$7<sup>95</sup>**

## General Purpose 40/60 Solder

Acid cored 40/60 (Tin/Lead) solder that's ideal for copper, brass, tin, iron, stainless steel, nickel, zinc and silver. NB: It is not recommended for aluminium or electrical/electronics applications. In 1.2mm x 76g roll

Cat N-1630 **\$6<sup>95</sup>**

## General Purpose 5 Core

40/60 (Tin/Lead) solder with non-corrosive flux core that's suitable for electrical and general purpose applications. Comes in a 1.4mm x 14g pack

Cat N-1634 **\$3<sup>95</sup>**

## Acid Brush

When all the regular brushes have been eaten away to nothing, these sturdy brushes will still be slapping on acid with the best of them. In 1/8" x 1/2" sizes, packet of three.

## Tip Tinner & Cleaner

A fast and efficient method of cleaning and re-tinning soldering iron tips. 15 gram tin.

Cat N-1648 **\$9<sup>95</sup>**

## Emergency Solder Solder Tape

It melts with a match! Just the thing to get you out of trouble. Low temperature resin cored, tin/lead solder tape. Not suitable for aluminium. In handy 43 gram roll.

Cat N-1632 **\$4<sup>95</sup>**

## Save a bit of your tip! Savbit Solder

Electronics 60/38/2 solder. The 2% copper component helps extend the life of your soldering iron tip. 0.91mm x 200g roll

Cat N-1621 **\$7<sup>95</sup>**

## Aluminium Solder

Alu-Sol is an aluminium based solder used for joining aluminium, most alloys and dissimilar metals. Requires no additional flux or surface preparation.

131.6mm (15G) x 100g roll Cat N-1625 **\$11.95**

1.6mm (15G) x 8g tube Cat N-1640 **\$2.95**

## 95/5 Tin Antimony Solder

Lead free, non toxic, acid core solder that's ideal for soldering copper, brass, tin, jewellery, etc. It is not suitable for electrical or aluminium work. 1.4mm x 7 grams.

Cat N-1624 **\$2<sup>95</sup>**

## DESOLDERING BRAID

### Pro-Wick De-Soldering Braid

Pro Wick Braid 1.5mm x 1.5m #2 Cat N-1802 **\$3.75**  
Pro Wick Braid 2.2mm x 1.5m #3 Cat N-1803 **\$3.75**  
Pro Wick Braid 2.5mm x 1.5m #4 Cat N-1804 **\$3.95**  
Pro Wick Braid 3.7mm x 1.5m #5 Cat N-1805 **\$3.95**  
Nude Wick UNFLUXED 2.2mm x 1.5m Cat N-1807 **\$3.95**  
Pro Wick Braid 2.2mm x 7.5m #3 Cat N-1808 **\$14.95**  
Pro Wick Braid 2.5mm x 7.5m #4 Cat N-1809 **\$14.95**

### \* Chem-Wik Lite

1.9mm x 1.5m roll (green) Cat N-1680 **\$3<sup>95</sup>ea**  
2.5mm x 1.5m roll (blue) Cat N-1681

**\$2<sup>95</sup>**

Cat N-2001

## Butane Gas Refill

Ideal for butane powered soldering irons, cigarette lighters, or any butane fuelled device. 100 grams

Cat N-1081 **\$4<sup>95</sup>**

## CRC 2-26 Lubricant

A high grade lubricant which improves motor generator winding insulation resistance, protects against high humidity, improves electrical properties, displaces moisture, loosens corroded nuts, bolts, etc, lubricates and protects. 500g spray.

Cat N-1060 **\$19<sup>95</sup>**

## WD-40

We've all used it sometime! Lubricates, displaces moisture, penetrates, protects, cleans..... there's always another use for the mechanic in a can. A favourite standby for drying out and protecting car ignition systems. 255g spray.

Cat N-0104 **\$4<sup>95</sup>**

## Economy Heat Transfer Compound

Silicon based compound for thermo coupling of electronic components and heatsinks. High heat conductive properties allows heat to pass freely where heat dissipation and dispersion is important. 10g tube.

Cat N-1205 **\$2<sup>95</sup>**

## Silastic 732RTV

Adheres to, seals and insulates rubber, wood, glass, metal, plastic, etc. Acid curing, in a 75g tube.

## Super Glue

10ml bottle. Cat N-1219 **\$7.95**

3ml tube. Cat N-1217 **\$2.95**

## Super Glue Remover

If you oops! with the Super Glue, you don't have to be stuck with a problem. 10ml container.

Cat N-1221 **\$5<sup>95</sup>**

### Authorised Stockist!

## Genuine US Gaffa Tape

It has to be the most widely used tape on the planet! Genuine Gaffa tape sticks to almost anything, it's easy to remove and long wearing!

25 Metre Roll. Black. Cat N-1400 **\$12.95**

40 Metre Roll. Black. Cat N-1405 **\$21.95**

25 Metre Roll. Silver. Cat N-1410 **\$12.95**

## Double Sided Tape

Indoor Use: 12mm x 2m Acrylic Foam.

White. Cat N-1380 **\$3.95**

Outdoor Use: 12mm x 5m. Butyl Foam.

Black. Cat N-1382 **\$8.95**

## ADHESIVES

### Contact Adhesive

Easy to apply and gives a lasting bond. The flexible nature of the joint helps give long life where movement is a problem. 50ml.

Cat N-1224 **\$4<sup>95</sup>**

### PVA Glue

Ideal for wood, cloth, leather, etc... it has a million and one uses around the house. 50ml bottle.

### 5 Minute Epoxy

Two part mix. Hard wearing Epoxy glue for repairs, etc requiring a gap filling compound. 24ml easy mix syringe.

Cat N-1228 **\$7<sup>95</sup>**

## TAPES

### Coloured Insulation Tape

Hard wearing coloured insulation tape. 19mm x 18m rolls. Six colours to choose from.

Green/Yellow	Cat N-1359
Orange	Cat N-1360
Red	Cat N-1361
Black	Cat N-1362
Brown	Cat N-1363
Blue	Cat N-1364

**\$1<sup>25</sup>ea**





# ELECTROLUBE®

## BULK QUANTITIES

Selected Electrolube cleaners - Safewash, Saferinse, Electronic Cleaning Solvent, Isopropanol, Ultrasolve and PCB Cleaner (PCC) - are available in bulk containers in the following sizes:

**1 Litre, 5 Litre  
20 Litre**

**For special prices on bulk quantities, contact our Wholesale Division on:**

### Head Office:

**Sydney: (02) 888 3200**

**Outside Sydney: 008 26 3922**

**(Free Call)**

### Melbourne Office:

**(03) 428 0140**

## Ultrasolve Non-CFC Cleaning Solvent

A unique blend of solvents specially formulated for quick and efficient cleaning of electrical contacts, computers, precision instruments, cameras, etc. Excellent for removing greases, oils and flux residues from PCBs. Leaves a perfectly dry surface and is harmless to most plastics, rubbers and surface coatings.

200ml/175gm aerosol Cat N-1170 **\$12.95**  
400ml/300gm aerosol Cat N-1172 **\$22.95**

## Isopropanol Cleaning Solvent

An internationally-approved cleaning solvent formulated to standards set by the major manufacturers. Rapid drying 99%-pure Isopropanol, it will thoroughly clean all electronic equipment and is safe to use on most plastics.

400ml/300gm aerosol **\$27.95**

Cat N-1095

## Permagard

A multi-purpose maintenance fluid that dries out damp electrical connections, penetrates corroded parts, lubricates & protects metal surfaces and frees seized parts. High oil content ensures long term protection.

200ml/300gm aerosol **\$10.95**

Cat N-1120

## Spray Freezer

Powerful, inert refrigerant for instant cooling of small components to at least -50C. Freezer is non-corrosive, safe to use and is ideal for detecting faulty joints and components as well as shrink-fitting.

400ml/450gm aerosol **\$26.95**

Cat N-1110

## Anti-Static Foam Cleanser

A very efficient anti-static foaming cleanser for surfaces prone to static dust attraction. It's been specially developed for use on plastics, metal, glass and other synthetic surfaces. It has powerful anti-static properties yet safe to use on delicate surfaces.

200ml/175gm aerosol **\$9.95**

Cat N-1145

## Safewash 2000 PCB Cleaning Foam

A water-based, non-flammable, 100% ozone-friendly, biodegradable solvent blend designed to clean PCB flux residues and grease quickly and efficiently. Safewash 2000 is a leap forward in cleaning technology, dissolving all types of organic and inorganic residues, even underneath surface mounted components. Unique foaming action ensures accuracy and economy in use.

400ml/400gm aerosol **\$29.95**

Cat N-1180

## Saferinse 2000

A safe rinsing solution designed to remove all traces of residue after cleaning with Safewash 2000, especially underneath components. Saferinse speeds up the drying process and is non-flammable, non-hazardous and biodegradable.

400ml/400gm aerosol **\$24.95**

Cat N-1182

## Contact Cleaner Lubricant

A dual-acting solvent blend which improves electrical contact by first removing surface contamination and oxides. A fine film of contact lubricant is then left to ensure long-term protection from corrosion and arcing. Ideal for pots, connectors, plugs and sockets.

200ml/300gm aerosol **\$16.95**

Cat N-1115

## Clear Protective Lacquer

A protective coating designed to prevent environmental attack on printed circuit boards. Will keep out harmful salt, dust and moisture. Can be soldered through for easy repairs.

200ml/175gm aerosol **\$14.95**

Cat N-1130

## Silicone Grease Compound

A high-quality multi-purpose electrical insulating compound. Protects against moisture, corona discharge and airborne contamination. Can also be used as a sealing, potting or packing grease for electronic equipment, glands and joints. Operating temperature range -50C to +200C.

35ml/35gm syringe **\$32.95**

Cat N-1128

## Nickel Screening Compound

An extremely efficient EMI/RFI screening coating based on pure Nickel powder. It has excellent attenuation levels across a wide frequency range, will adhere to most surfaces and is fast drying.

400ml/600gm aerosol **\$79.95**

Cat N-1138

## Heat Transfer Compound

Non-silicone compound for reliable and efficient dissipation of heat. Should be applied to base and mounting studs of components, thermostats and heat sinks.

10ml/20gm syringe **\$8.95**

Cat N-1200

## Plus 2X Contact Lubricant

A premium-quality lubricant that will significantly increase contact performance and life, ensuring reliability and low contact resistance. Excellent plastic and rubber compatibility. Handy dispenser for pinpoint accuracy.

5ml/5gm pen **\$9.95**

Cat N-1047

## Multi-Purpose Grease

An excellent lubricating grease for a wide range of electrical and mechanical applications. Safe on most plastics, it has an operating temperature range of -20C to +200C.

50ml/45gm tube **\$9.95**

Cat N-1132

## Anti-Seize Paste

A high-temperature pure copper compound to reduce wear and protect metal interfaces against seizure. Ideal for preventing soldering and desoldering tips from sticking.

2ml/2gm syringe **\$9.95**

Cat N-1106

## Air Duster

Pure, dry compressed inert gas for removal of dust and airborne contamination from very delicate or inaccessible areas of electrical and electronic equipment. Ideal for computers, cameras and hi-fi equipment.

400ml/450gm aerosol **\$29.95**

Cat N-1150

# ELECTROLUBE®





## SCREWDRIVER SETS

### A. Push-Action

Makes fixing or removing screws easy! With clockwise, anti-clockwise and fixed direction selection. 6 & 4mm flat heads, Nos 1 & 2 Phillips and 2 hole reamers (2 & 2.8mm). Bits store in the handle.

Cat T-4512 **\$6<sup>95</sup>**

### B. Magnetic Screwdriver Set

A fully insulated, magnetic head screwdriver set with 6 bits. Bits store in the handle. With 4.5 & 6mm flat blades, Nos 1 & 2 Phillips head and Nos 1 & 2 Pozidrive.

Cat T-4505 **\$6<sup>95</sup>**

### C. Universal Bit Set

For manual or electric screwdrivers! With Phillips Nos 1 & 2, flat 4.5 & 7mm, Pozidrive Nos 1 & 2. Includes driver shaft.

Cat T-4518 **\$5<sup>95</sup>/set**

### D. 5 Bit Screwdriver

Large rubber handle for added grip! With flat blades (1.2mm x 6, 6.5 & 7mm) and Phillips heads Nos 1 & 2. Bits fit into handle. Made from quality chrome-vanadium steel.

Cat T-4500 **\$6<sup>95</sup>**

### E. T-Bar Magnetic

The T-bar handle gives you a good grip. Comes with 6 magnetic bits - 2 Phillips, 2 flat blades and 2 Torx bits. Bits are stored in plastic holder. Made from chrome-vanadium steel.

Cat T-4515 **\$6<sup>95</sup>**

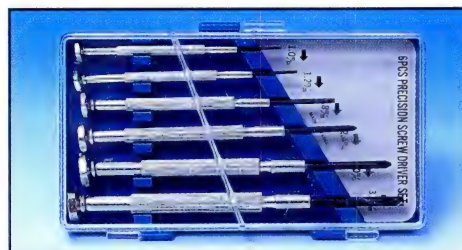


### 6 Piece Electronics Screwdriver Set

With stand!

Beautifully designed, 140mm extra fine screwdrivers with free running heads. The specially hardened tips give years of service. With Flat blades; 1.5 x 50mm, 2 x 50mm, 2.5 x 50mm & 3 x 50mm. Phillips head; Nos 00 x 50mm & 0 x 50mm. Complete with handy stand.

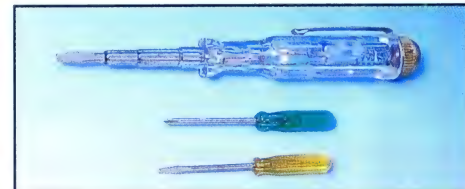
Cat T-3510 **\$14<sup>95</sup>**



### Precision Screwdriver Set

A beautifully made set with both Phillips and flat head screwdrivers. Each has a free running top and they're presented in a handy plastic storage box with a transparent lid for easy identification. Contains - Phillips head: 2.4 & 3mm. Flat Blade: 0.9mm, 1.2mm, 1.8mm and 3.5mm.

Cat T-4360 **\$5<sup>95</sup>**



### Neon Test Screwdriver

A must when you're working around live voltages. Flat blade, insulated screwdriver fitted with neon indicator. Operates from about 90V (AC or DC).

**\$3<sup>95</sup>**

### Mini Screwdrivers

Cat T-4005

They're tiny! Just the thing for models, turntable cartridges, etc.

Flat Blade: Cat T-6010  
Phillips: Cat T-6015

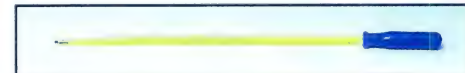
**\$1<sup>45</sup>ea**



### TV Alignment Kit

A versatile set of 4 general purpose tools covering all shapes and sizes of cores. Made from tough plastic. Suits hex cores from 2 to 3mm plus slotted cores 1.5 to 2.5mm.

Cat T-4540 **\$5<sup>95</sup>**



### Alignment Tool

Screwdriver type

Plastic screwdriver with steel spring tip. Suitable for trimmers and mini IF's.

Cat T-4520 **\$4<sup>95</sup>**

## SCREWDRIVERS

### Crescent

NEW '93

### Quality 'Crescent' Screwdrivers

The Crescent range has precision-ground sand-blasted tips for greater accuracy. They're made of rust-resistant tempered chrome-vanadium steel alloy and have moulded full-size oil and solvent-resistant handles.

6 x 40mm	Flat stubby screwdriver	T-6300	<b>\$5.95</b>
3 x 75mm	Flat screwdriver with pocket clip	T-6302	<b>\$2.95</b>
4 x 100mm	Flat blade	T-6304	<b>\$3.95</b>
5 x 100mm	Flat blade	T-6306	<b>\$4.95</b>
6 x 150mm	Flat blade	T-6308	<b>\$6.95</b>
6 x 150mm	Insulated flat blade	T-6310	<b>\$5.95</b>
40mm	Phillips stubby #2	T-6312	<b>\$7.95</b>
75mm	Phillips #0	T-6314	<b>\$3.95</b>
100mm	Phillips #1	T-6316	<b>\$6.95</b>
150mm	Phillips #2	T-6318	<b>\$8.95</b>
Crescent 4-piece screwdriver pack T-6130 <b>\$19.95</b>			



### Fully Insulated! Holding Screwdriver Set

A high quality 5-piece screwdriver set that's fully insulated from handle to shaft end. What's more, the specially designed head 'holds' the screws so you don't drop them into awkward places. With 3 flat blades; 5 x 150mm, 4 x 125mm, 3 x 125mm, and two Phillips head; No's 1 & 2.

Cat T-4395 **\$22<sup>95</sup>**



### With neon tester! Electrician's Screwdriver Set

Insulated to 1000 volts! Ideal for electricians or anyone working with high voltages. It's an 8-piece screwdriver set which includes a neon tester. You get - Flat Blade: 6 x 150mm, 5 x 125mm, 4 x 100mm & 2.5 x 75mm and Phillips head: No's 0, 1 & 2.

Cat T-4390 **\$19<sup>95</sup>**



### Electronics Screwdriver Set

Especially long, very fine screwdrivers that are ideal for getting into those tight spots you often find while working with electronics (ie. those case screws that hide 1500mm down some \* @&\* hole!). With 6 screwdrivers including... Phillips head: 2.5 x 75mm, 3 x 100mm, 3 x 150mm. Flat Blade: 2.5 x 75mm, 3 x 100mm, 3 x 150mm.

Cat T-3540 **\$9<sup>95</sup>**



### Mini Screwdriver set

A handy little set of 8 mini screwdrivers and tools including three different size flatheads, 3 Phillips heads, reamer and scribe. All are 95mm long. It also contains a large diameter handle which slips over the existing handle for added grip. In handy plastic case.

Cat T-6200 **\$6<sup>95</sup>**



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- **AGC Credit Line**
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- **Road Freight:**

A good balance of expense and speed - delivery anywhere within a few days!

- **Postal:**

Australia Post will deliver your parcel promptly at very reasonable cost.

- **Courier:**

Dick Smith Electronics couriers deliver all over Sydney for those customers who simply can't wait.

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Outside Sydney**

**(Free Call):(008) 22 6610**

**Sydney: (02) 888 2105**

- **Fax: (02) 805 1986**

- **Mail Orders:**

**Dick Smith Electronics  
Mail Orders**

**Reply Paid 160**

**PO Box 321**

**North Ryde, 2113, NSW**

**(No postage required)**







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- **Fax: (02) 805 1986**
- **Mail Orders:**  
**Dick Smith Electronics**  
**Mail Orders**  
**Reply Paid 160**  
**PO Box 321**  
**North Ryde, 2113, NSW**  
**(No postage required)**







## PLIERS



## Spring Loaded Pliers/Nippers

High quality handtools to help make work easier! Specially selected for project work, they're all high carbon steel, drop forged, hardened and tempered with insulated handles.

127mm Needle Nose Cat T-3290  
115mm Diagonal Nipper Cat T-3291  
115mm Long Nose Cat T-3292  
153mm Needle Nose Cat T-3293

125mm Flat Nose Cat T-3296  
125mm Bent Nose Cat T-3297  
115mm End Nipper Cat T-3298

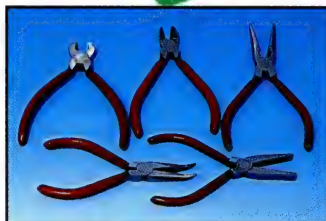
**\$9<sup>95</sup>** each



## Transistor Nippers

Ideal for PCB work! Stainless steel construction with insulated handles. Spring loaded, standard angle blades allow completely flush cutting edge. 5mm opening x 8mm blade. Cat T-3205

**\$22<sup>95</sup>**



## 5 Piece Pliers Set

A quality plier set! All are drop forged, high carbon steel. With 127mm needle nose, 127mm bent nose, 127mm flat nose, 115mm diagonal cutting and 115mm end cut pliers in a handy plastic pouch. Cat T-3295

**\$29<sup>95</sup>**

## WIRE STRIPPERS



## Economy Wire Strippers

Large adjustable range. Hardened jaws, easy to use and bargain priced. Cat T-3630

**\$4<sup>95</sup>**



## 3-in-1 Stripper

Three handy tools in one. It's a measured wire stripper, plier and wire cutter. With spring loaded, insulated handles. Cat T-3165

**\$7<sup>95</sup>**

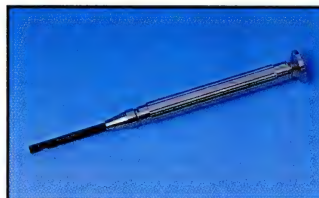


## Micro-Precision Plier Set

A superbly built set of spring loaded micro pliers/nippers with fully insulated handles. They're made from quality stainless steel and come with; 90mm cutting nippers, 100mm flat nose, 100mm round nose, 100mm bent nose and 100mm long nose pliers.

A must for the toolbox! Cat T-3575

**\$29<sup>95</sup>**



## Wire Wrapper/Stripper

So simple, yet so effective! It's a great low price and makes wire wrapping and stripping a breeze. Cat T-3650

**\$14<sup>95</sup>**



## Deluxe Wire Strippers

A completely automatic wire stripper.... one action is all it takes. Allows you to strip wires from 1mm to 3.2mm. Ideal for hobbyists, technicians, etc. Cat T-3620

**\$22<sup>95</sup>**



## 8 Piece Hobby Tool Kit

A bargain priced tool kit that comes with 6 jeweller's screwdrivers (0.9, 1.2, 1.8, 2.4, 3 & 3.2mm flat head), quality 120mm long nose pliers and 110mm side cutters. The pliers are hardened and tempered with insulated handles. Cat T-3294

**\$24<sup>95</sup>**



*Fits in your pocket!*

## 13 Piece Hobby Tool Kit

This fantastic tool kit comes in an ingenious hard plastic case that folds-up small enough to fit in the pocket or bag. It's a quality tool kit and comes with 3 assorted mini files, retractable knife, stainless steel tweezers, mini flat nose pliers and cutting nippers, and 6 precision screwdrivers. Cat T-4600

**\$34<sup>95</sup>**





## 16 Piece Computer Servicing Kit

No computer enthusiast should be without one. It contains:

- PLCC Extractor
- Wire Cutters
- Long-Nose Pliers
- Component Tube
- 1/4" Hex Driver
- 3/16" Hex Driver
- Driver Handle
- Double-ended Torx bit (T-10/T-15)
- IC Inserter (14 & 16 pin)
- Large Flat-Head Screwdriver - 75 x 5mm

**NEW '93**

- Small Flat-Head Screwdriver - 75 x 3mm
- Large Phillips-Head Screwdriver - No. 1
- Small Phillips-Head Screwdriver - No. 0
- Insulated Tweezers
- Pearl Catch
- IC Extractor

All in an attractive zippered case.

**\$49<sup>95</sup>**

Cat T-4843



## 27-Piece Computer Servicing Kit

Everything a computer serviceman needs. Includes:

- PLCC Extractor
- Wire Cutters
- Long-Nose Pliers
- Component Tube
- Desoldering Pump
- Solder in Dispenser Tube
- IC Inserter (14 & 16 Pin)
- 1/4" Flat/No. 2 Phillips Screwdriver Bit
- 3/16" Flat/No. 1 Phillips Screwdriver Bit
- Small Flat-Head Screwdriver
- Small Phillips-Head Screwdriver
- Double-Ended Torx Bit (T-10/T-15)

**NEW '93**

- 1/4" Hex Driver Bit
- 3/16" Hex Driver Bit
- Driver Handle
- Small Insulated Tweezers
- Needle-nose Tweezers
- Pearl Catch
- IC Extractor
- Cleaning Brush
- Anti-static Wrist Strap
- 150mm Shifting Spanner
- Crimping Tool
- Soldering Aid Set
- Heat-Sink Clip

All in an attractive zippered case.

**\$99<sup>95</sup>**

Cat T-4852



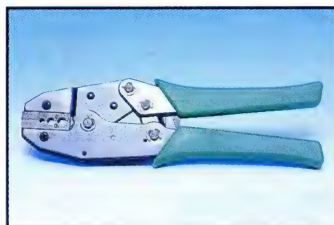
### Tweezers

Fine point tweezers for holding small nuts, components, delicate instruments, wires, etc. Also great for removing ticks! One of the handiest tools you can have around.

**Pointed** Cat T-4620

**Serrated Jaw** Cat T-4630

**\$3<sup>95</sup> ea**



### Ratchet Coaxial Crimping Tool **NEW '93**

Built to last, it's perfect for F, BNC, TNC, N, Teflon, Thinnet PVC and Fibre-Optic Connectors. Has an accurate ratchet drive and double jaws for single-action crimping.

**\$49<sup>95</sup>**

Cat T-3537



### Professional Crimping Tool

The ideal tool for the tradesman. This robust crimper has a ratchet drive for accurate control, variable pressure adjustment and double jaws for single action crimping.

**\$49<sup>95</sup>**

Cat T-3535

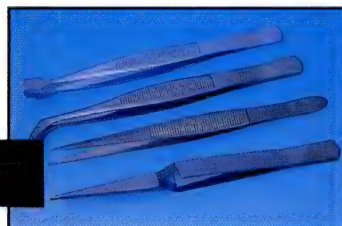


### Crimping Tool

This economical, lightweight crimper can cut, strip, and crimp your cable quickly and reliably. Makes fitting lugs and connectors a breeze.

**\$4<sup>95</sup>**

Cat T-3525



### Universal Tweezer Set

Four different 110mm tweezers in one pack. With fine point blades, flat blades, curved blades and even reverse action (squeeze to release). A handy set for the toolbox.

**\$9<sup>95</sup>**

Cat T-4625



### IC Pin Straightener

A very handy tool that makes straightening IC pins a breeze. Simply slip the IC into the slot and squeeze.... it's that easy. Accepts 8 to 20 Pin narrow and 24 to 48 Pin wide IC's.

**\$9<sup>95</sup>**

Cat T-4535

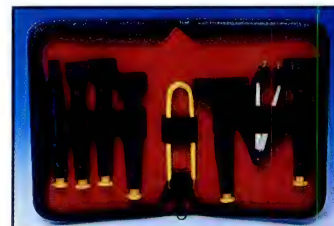


### IC Extraction Tool

The perfect way to remove IC's without damaging them. Works with all DIL IC's and ensures no bent pins and no static damage. Operates like a pair of hooked tweezers.

**\$3<sup>95</sup>**

Cat T-4650



### 8 Piece IC Insertion & Extraction Kit

This high quality kit will help to make sure you never damage IC's when removing or installing them. The zippered vinyl case contains 6 IC inserters for all the common DIL packages, plus DIL and square IC extractors.

**\$44<sup>95</sup>**

Cat T-4848





## Utility Knife

You'll never have to put up with blunt blades again. The handy knife contains a snap-off replaceable blade and comes with a safety blade lock plus a comfortable sized grip for accurate work.

Cat T-3615 **\$3<sup>95</sup>**

Replacement Blades. Pack of 10. Cat T-3616 **\$1.95**

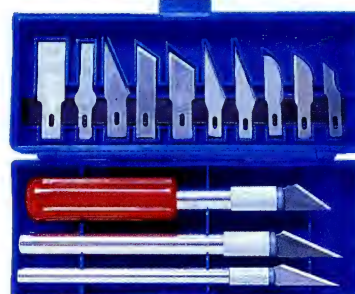


## Three Strippers in One!

### Adjustable Coax Stripper

Change cable size in seconds simply by rotating the internal cable guide to the appropriate setting. Cut depth of the replaceable blades is adjusted by a supplied allen key. Rotary-strips sizes RG-58 (3C2V), RG-59/62, & RG-6. Cat T-3640

**\$19<sup>95</sup>**



## Precision Knife Set

Cat T-3618

The right size and shape knife for just about any job! This 13 piece Precision Knife Set comes with three quality (varying size) knife handles and 10 spare blades of various shapes and sizes. There's bound to be just the one you're after. Comes in a handy plastic storage case.

**\$15<sup>95</sup>**

Replacement Blade Set. Cat T-3619 **\$5.95**



## Needle File Set

A must for the toolbox! A fantastic set of five needle files with a great selection of shapes for just about any job. The 90mm insulated handles allow you to get a good grip while the 75mm blades give you plenty of length for most jobs. The quality is excellent and they come in a handy plastic storage pouch.

T-3230 **\$19<sup>95</sup>**



## Nibbling Tool

A must for chassis and panel work! Allows you to cut almost any shape or size hole in sheet steel to 0.6mm thick or light alloy to 1.5mm thick. It's also great for plastic. Follows curved or straight lines with ease.

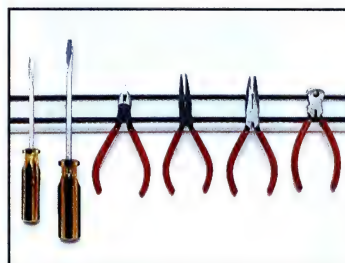
Cat T-4945 **\$17<sup>95</sup>**

## Handy 4 Blade Scraper

This handy scraper has a blade with four surfaces on it for deburring and countersinking holes as well as general finishing work. It'll help you give your project's front panel, chassis, etc a professional finish. Cat T-3625



Great value! **\$4<sup>95</sup>**



## Magnetic Tool Holder

Ideal for the workshop, garage or even for the kitchen knives! Magnetic Tool Storage Bar holds metal tools, etc against the wall for easy identification and easy storage. The 50cm strip simply screws to the wall. Cat T-5500

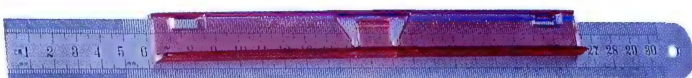
**\$6<sup>95</sup>**



## Mirror & Pick-up Tool

Great when you're working in tight places. The inspection mirror with telescopic arm and swivel head allows you to get in there and see what's happening. The other end of the telescopic arm doubles as a magnetic pick-up tool. Cat T-4525

**\$6<sup>95</sup>**



## Rule With Cutter Guard

A great idea that allows you to cut straight lines with accuracy and safety! A quality steel rule with a sliding plastic cutter guard. The guard has a special finger shield to help prevent nasty accidents and it can also act as a depth gauge and ruler support.

Cat T-5146 **\$12<sup>95</sup>**

## Cutter Guard

Fits any standard 300mm steel ruler and allows you to cut lines accurately and without fear of damaging yourself should the cutting blade run amuck. Also comes in handy as a depth gauge and ruler support.

Cat T-5147 **\$3<sup>95</sup>**



## Tapered Reamer

The perfect tool for shaping and enlarging holes in thin metals, plastics, and wood. Great for chassis bashers - gives you exact sized holes. Tapers from 4mm to 22mm and it's made from high quality treated steel.

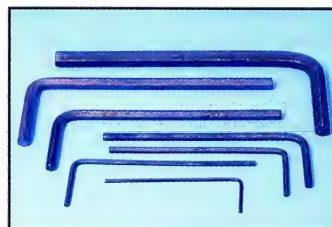
Cat T-4920 **\$17<sup>95</sup>**



## Countersink Tool

Makes countersinking screws easy! Simply drill the hole, insert the countersink tool and turn it. It's got a hardened blade for a long, trouble-free life.

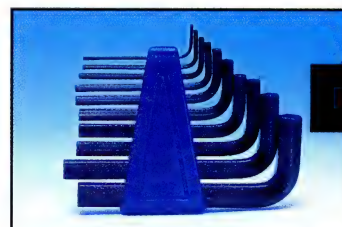
Cat T-4925 **\$4<sup>95</sup>**



## Allen Key Set

This set is a must for working on European and Japanese equipment which uses Allen screws. The 7 gunmetal finish Allen keys come in a plastic wallet in sizes 0.89mm, 1.5mm, 1.27mm, 2mm, 2.5mm, 3mm, and 4mm.

Cat T-5080 **\$5<sup>95</sup>**



## 10 Piece Allen Key Set

A handy metric Allen key set that comes complete with plastic clip to help keep them together and organised. Contains 1.5mm, 2mm, 2.5mm, 3mm, 4mm, 5mm, 5.5mm, 6mm, 8mm & 10mm Allen keys.

Cat T-3545 **\$4<sup>95</sup>**



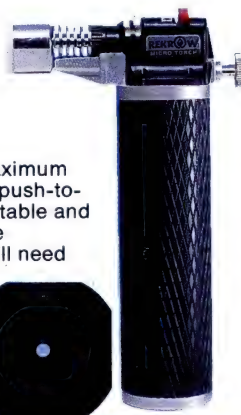


## Economy Pencil Blowtorch

Great for heatsink work, silver solder, gold, silver, brazing, glass work, etc. It fits easily in the pocket and it's powered by butane gas (the same as they use in cigarette lighters, etc). Incredibly handy... super value!

**\$9<sup>95</sup>**

Cat T-1380



## With electronic ignition! Mini Blowtorch

An incredibly handy tool that's designed for maximum versatility. It's butane powered and has simple push-to-start electronic ignition. The flame is fully adjustable and it fits beautifully in the hand or can stand on the benchtop (comes with stand). Don't forget, you'll need some butane gas to get it working (see page 110 of this catalogue).

**\$49<sup>95</sup>**

Cat T-1390



## The future of Laser Technology... It Points This Way! Laser Pointer

This new pen-sized laser pointer reaches far beyond the range of ordinary pointers and serves many useful purposes. It's ideal for medical professionals, professors and lecturers, executives and sales people, realtors, tour guides, construction supervisors and inspectors. The Laser pointer is also an asset for any photographer as it simplifies difficult dead corner and night shots.

Specifications:  
Diode / < 5mW Max at 680mm  
Cat T-2900

**NEW '93**

**\$189**

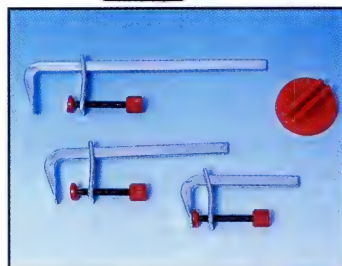


## Hobby 'G' Clamp Set

Three handy 'G' clamps that are perfect for most hobby work, model making, etc. All fit the 30mm (diam.) magnetic base supplied. Sizes include 40mm x 35mm, 30mm x 30mm & 20mm x 25mm.

**\$6<sup>95</sup>**

Cat T-4755



## Hobby 'F' Clamp Set

Just like a spare set of hands for the workbench or toolbox. Three sizes: 20 x 120mm, 20 x 80mm & 20 x 40mm. All three clamps fit to the 38mm magnetic base included in pack.

**\$6<sup>95</sup>**

Cat T-4750



## Hobby Mini Vice

Sturdy, lightweight, portable and incredibly handy. Fits easily to workbench, table, etc (anything up to about 25mm thick). Jaws are 60mm wide and they open to 50mm. Made from die-cast aluminium alloy for strength and durability.

**\$15<sup>95</sup>**

Cat T-4747



## High quality 3" Swivel Vice

A very high quality mini vice that can be bolted, or suction fixed to the benchtop. It's made from high quality cast alloy and has steel jaws with removable rubber pads. The ingenious swivel action allows you to mount it in almost any position.

**\$49<sup>95</sup>**

Cat T-4745

## PLCC Extractor

Every computer tech needs one! For removing plastic-leaded chips and upgrading computer processors, this extractor makes the job a breeze.

Cat T-4655

**\$9<sup>95</sup>**



## STORAGE SYSTEMS

The effective way to keep your workshop organised is with.... these quality plastic storage systems.



## Modular Drawers

Twin removable drawers with 3 lift out compartments. Can be clipped together to create your own storage system.

## Modular Tilt Drawers

Cat H-2580 **\$9<sup>95</sup> ea**

Sturdy plastic tilt drawers which can be clipped together for an effective storage system. 103 x 120mm.

## Storage Bins

Cat H-2581 **\$9<sup>95</sup>**

Handy storage bins which fit louvered wall panels or can be stacked together.

0.5 Litre	100 x 118 x 60mm	Cat H-2477	<b>\$3<sup>95</sup></b>
1 Litre	100 x 175 x 85mm	Cat H-2478	<b>\$5<sup>95</sup></b>
2.5 Litre	133 x 225 x 125mm	Cat H-2479	<b>\$9<sup>95</sup></b>

## Plastic Storage Cases

Durable plastic cases with separate compartments and locking lid.

190 x 117 x 35mm	5 compartment	Cat H-2498	<b>\$4<sup>95</sup></b>
195 x 155 x 45mm	14 compartment	Cat H-2499	<b>\$6<sup>95</sup></b>





## High Speed Mini Drill

Exceptional value and a must for any workbench! This superb mini drill kit is big on performance and versatility. At up to 30,000 RPM (depending on the voltage used) and high torque, it's perfect for drilling, polishing, grinding, engraving, buffing... just about anything. It comes with 3 high speed drill bits, 3 collets, grinding bit, spanner, tommy bar and DC adaptor cable... all in a sturdy plastic case. Requires 12-35V DC (1.5-2A) adaptor.

Cat T-4751

**\$34<sup>95</sup>**



## Mini-Super Cleaner

Go where no vacuum cleaner has gone before with the mini super cleaner. A powerful handheld vacuum cleaner which is ideal for cleaning dust and dirt from electrical equipment. It blows, sucks and gets into all those small and awkward crevices with ease. Ideal for everything... computers, stereos and cameras, etc. Comes with a brush attachment and dust bag. Requires 4 X AA batteries.

Cat T-1700

**\$29<sup>95</sup>**

## 2 tools in one! The Tracker Stud Finder



If you thought only Superman had X-ray vision... think again! The tracker detects wood, metal and live cables through walls, floors, plaster board, chipboard and panelling, etc. It's ideal for locating joints, battens and rafters through walls when installing pictures, shelves or ceiling fans. As well, you can use it to detect live/dead cables, pipes and mains, etc. A safe and easy alternative to 'blind drilling'. Requires 9V battery.

Cat T-1990

**\$39<sup>95</sup>**



*Ideal for PCB work!*

## Arlec Super Tool

As anyone will tell you, working with PCB's can be incredibly frustrating and time consuming. That is... unless you have an Arlec Super Tool. It's an extremely high quality and reliable tool which sands, polishes, drills, engraves, and mills. The Arlec Supertool comes complete with a wire brush, milling cutters, grinding wheel, high speed drills, chuck collets, eraser sticks and mains plug pack adaptor. And to make life easy, it's all in a handy, go anywhere plastic case.

**ARLEC**

Cat T-4754

**\$84<sup>95</sup>**



## Heat 'N Strip Gun

When you're sick of sanding, scraping and chipping the slow way, get your hands on this! A great tool which can cut your work-time in half. Every home renovator or handyman should have one. It's ideal for heatshrink work, removing old paint, removing vinyl tiles, loosening rusted or over-tightened nuts, drying... and hundreds of other uses. It's lightweight, mains operated and has a dual temperature range (400 & 600°C).

Cat T-4845

**\$69<sup>95</sup>**

## Easy Etch Engraver

It sure beats bolting your tools down to the workbench everynight. The Arlec Easy Etch Engraver lets you quickly and easily mark tools, stereo equipment and household valuables with a permanent identification or serial number. It's easy to handle and has steel bits so you can engrave on metal, plastic, wood and most materials. Complete with 12V plug pack and long cord.

Cat T-4753

**\$39<sup>95</sup>**





# HOW TO USE YOUR MULTIMETER



**W**orking with electrical or electronic equipment without a multimeter is like reading without light, or exploring without a compass. The multimeter is, without doubt, the most useful instrument you can have. So, before you get serious about this fascinating world of electronics..... there are two things you'll need to know. What type of multimeter you need, and how to use it.

## Analogue or Digital?

The big difference between these two types of meters is in how you read the display.

An analogue meter will have several scales on the meter face. Many of these scales will be shared by different 'ranges'. For example, you might read 0-2.5mA on the same scale as you read 0-250mA and 0-250 volts. You simply

add the right 'units' to the scales to work out the correct reading; these 'units' are given to you alongside the pointer on the range switch.

On a digital meter the correct 'units' will automatically be displayed by the meter. For example; if you measure 4.5 volts DC, a digital meter will indicate 4.5 VDC, provided you have selected a DC voltage range higher than 4.5 volts. Some digital multimeters can even select the correct range by themselves, so you only have to set the selector switch to DC volts. These meters are called 'Autoranging' meters.

The other big difference between digital and analogue meters is in accuracy and precision. In general, digital meters provide readings that are more accurate and more precise than analogue meters.

## Unpacking and setting up.

When you purchase a multimeter, it is seldom ready for use. Most often, the batteries must be fitted. Make sure you follow the manufacturer's instructions carefully, and remember, even if the batteries are already inside the compartment, you may still need to remove some plastic wrap, or clip on a battery clip.

Included with your multimeter is a set of test leads. Sometimes these are permanently attached to the meter, but often they need to be plugged into the meter before use.

There are two test leads, one red and one black. If your multimeter only has two sockets, they are usually colour coded to show which lead plugs into which socket. If there are more than two sockets, find the one marked 'COM' and plug the black lead into this. Now look for another socket marked with 'V-Ω' (which is usually coloured red) and plug in the red lead.

Switch the power switch 'on' (if it has one), select one of the 'OHMS' ranges using the main selector switch (usually a very large dial on the front of the meter) and then short the ends of the test leads (or 'probes') together. If you are using an analogue meter, the needle will swing across part, or all, of the scale. On a digital meter, the display should read something close to zero.

If you've come this far..... you're ready for work.

## What can you measure?

Most multimeters give you at least four measurement options: DC voltage, DC current, AC voltage and Resistance (Ohms). More expensive meters often provide other options like AC Current, Capacitance, Frequency, etc.

Each measurement option is divided into ranges to give more flexibility. A range is named after the maximum reading possible for that given range. For example, if your meter has a 10 volt DC range, trying to measure more than

10 volts when this range is selected will cause the needle of an analogue meter to move past the 'full scale' mark, and cause a digital meter to indicate 'overload'. Generally, the more ranges there are, the better, because you can obtain a more precise reading from your meter.

## Always play it safe!

Your multimeter is a valuable test instrument which should be used with care to protect both the operator (you), and the instrument.

Before making any measurement, check that the meter is on a suitable range and the test leads are plugged into the right sockets. Most meters have some built in protection if you make a mistake, but you can't always rely on this.

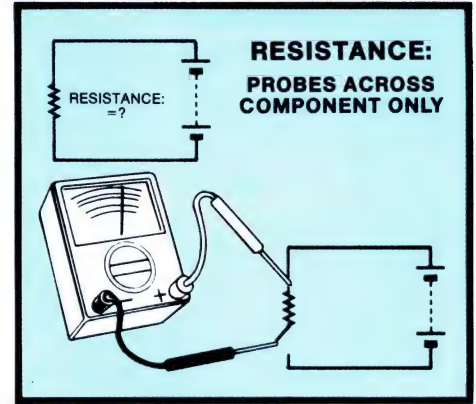
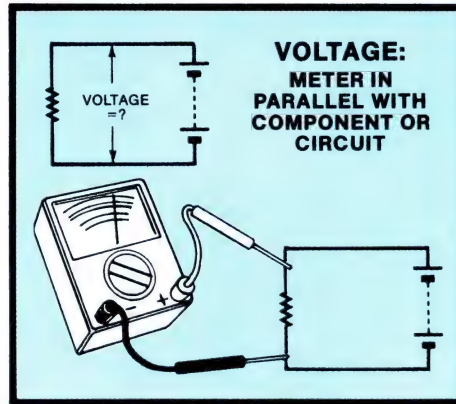
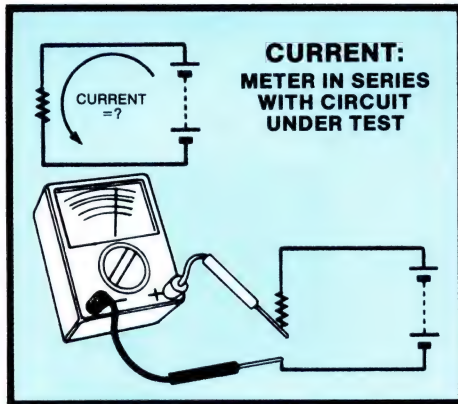
For example, most meters do not have fuse protection for higher current ranges. If, for example, you tried to measure the voltage of a 12 volt car battery, and accidentally plugged the probe into the '10 Amp' socket instead of the 'V-Ω' socket, you would effectively be shorting out the battery. The likely result would be personal injury due to burns, a possible exploding battery, and of course, a wrecked meter. An even greater danger applies when measuring high voltages, such as the mains.

**CAUTION.....** Most meters are designed for measuring voltages and currents in low power electronic circuits. Measurements should not be made on high power circuits unless the meter is suitably rated, and extreme care is taken.

Cont. next page







## MEASURING DC CURRENT

The important thing to remember when measuring current is that the meter must be placed in **SERIES** with the circuit. This means that the circuit must be open, with the meter leads connecting the two sections together so all the current flows through the meter.

Normally, a circuit is opened by disconnecting a wire or component; unfortunately, this is not always possible. For instance, if you want to know the current flowing through a certain PCB track, you must break the track (Gulp!) to include the meter in series. This can usually be done by cutting the track with a very sharp blade. When you have taken the measurement, flow solder over the cut to restore the connection.

Remember, when measuring current, start with your meter on the highest range and work down.

It is also important that the test leads are plugged into the right sockets on the meter.

If in doubt, check the manual.

Finally, the probes should be connected to the circuit with the correct polarity. The red probe is connected to the more positive side of the circuit; the black probe is connected to the more negative side. On an analogue meter, a reverse connection causes the meter to swing backwards. On a digital meter, you still get the right reading, but with a 'minus' sign in front of the value.

## MEASURING DC VOLTAGE

Measuring voltage is the exact opposite to measuring current: the meter is placed in **PARALLEL** with the circuit or component being measured and you measure the potential difference (voltage) between the two points.

Once again, the test leads must be in the right meter sockets, polarity must be observed, and you should start with the highest range and work down.

## MEASURING AC VOLTAGE

This is the same as measuring DC voltages; just follow the same steps and remember that the meter must be placed in **PARALLEL** with the circuit or component being measured.

A word of explanation about what the meter actually reads.....

During one cycle an AC wave starts at zero, rises to a peak, falls back to zero, and then does the same thing in the other direction.

The majority of meters indicate what is called the 'RMS' value of the voltage. This value (which stands for Root Mean Square) is a special kind of average, taking into account the fact that the voltage is always changing.

The 'RMS' voltage has exactly the same 'work value' as a DC voltage of the same magnitude. In other words, if you supplied an electric heater with 240 volts RMS, and then 240 volts DC, in both cases the heater would give out the same heat.

Multimeters fall into two classes when it comes to measuring AC voltage. Most meters can only indicate the correct 'RMS' voltage when the AC signal is a sine wave. More expensive meters can indicate the 'RMS' value for a variety of wave shapes; these meters are called 'True RMS' meters.

Fortunately, the majority of AC voltages that you will want to measure are in the form of a sine wave, so your meter will indicate the correct value.

## MEASURING RESISTANCE

When measuring resistance, it is important that the component you are reading is not affected by other components in the circuit. There is no point measuring a resistor when there is another resistor in parallel which is interfering with the reading. Therefore, it is normal practice to remove one end of the component under test, from the circuit, to avoid any possible influence.

*Always make sure that the power is turned off before making any measurement.*

If you have an analogue meter, before commencing measurement (and each time you change ranges) you must 'zero' the meter. This involves adjusting the 'ohms adjust' knob so that the pointer reads exactly zero ohms when the probes are shorted together. This step is unnecessary on a digital meter.

Select the lowest resistance range, and place the probes across the resistor (or component you are testing). If the needle on an analogue meter doesn't move (or barely moves), or a digital meter does not give a sensible reading, switch up to the next range.

The best range to choose is the one where the needle on an analogue meter is in the last third of the scale, and where a digital meter gives the greatest number of digits after the decimal point.

**How do you check Transistors?**

**See p201 of our Data Section**

## Points To Remember

1. Meter in *Series* for Current
2. Meter in *Parallel* for Voltage
3. Start on the highest range and work down for Voltage and Current
4. Isolate component when measuring Resistance
5. Take care of your meter



# Analogue Multimeters



## Mini Multimeter

You can carry this multimeter with you everywhere - it's lightweight and fits neatly in your pocket! The multimeter has 16 ranges, an easy to read 3 colour scale, 2K per volt sensitivity, mirrored scale and battery checker. It comes in a safety yellow colour, complete with test leads and instruction manual.

### Ranges:

DC V: 2.5, 10, 50, 250, 500V  
AC V: 10, 50, 250, 500V  
DC (current): 500  $\mu$ A, 10mA, 250mA  
Resistance: x 10 x 1K ohms  
Battery Check: 1.5V, 9V  
Cat Q-1004

**\$16<sup>95</sup>**



## 14 Ranges Plus dB

A top value multimeter you can toss in your toolbox and use just about anywhere. It's solidly constructed, fits easily into your pocket and is ideal for the novice just getting into electronics. With inbuilt diode and fuse protection, 2,000 ohm per volt sensitivity, mirrored scale and carry case.

- Diode and fuse protection
- 14 ranges plus dB

### Ranges:

DC V: 10, 50, 250, 1000V  
ACV: 10, 50, 250, 500V  
DC (mA): 0.5, 50, 250  
Resistance: x 1, x 10, x 1K ohms  
Decibels: -20dB to + 22dB  
Cat Q-1000

**\$22<sup>95</sup>**



## 14 Ranges Including Battery Check

Compact in size, yet big on performance. As well as the ranges you'd expect from a full featured multimeter, it comes with a handy battery checker for 1.5 and 9 volt cells. With a sensitivity range of 10,000 ohms per volt, mirrored scale for minimising parallax errors and deep recessed jacks... to ensure you don't get zapped. Ranges are carefully chosen for maximum versatility for the hobbyist or professional. With carry case.

- Diode and fuse protection
- 14 ranges plus dB

### Ranges:

DCV: 2.5, 50, 250, 1000V  
ACV: 10, 50, 250, 1000V  
DC (mA): 10, 250  
Resistance: x10, x1Kohms  
Batt. check: 1.5 & 9V (scale: replace/?/good)  
Decibels: -20dB to + 22dB

Cat Q-1015

**\$29<sup>95</sup>**



## With audible continuity tester 19 Ranges Plus dB

One of our most popular meters! A compact and reliable multimeter with continuity testing, wide 10A range and battery checker. You'd hardly expect to find such great features on a multimeter at this low price. But there's even more! You get high sensitivity (20,000 ohms per volt), mirrored scale for accurate readings, and large banana plugs for a sure contact.

- Diode and fuse protection
- 19 ranges plus dB
- Built-in battery checker
- Built-in Buzzer for continuity checker

### Ranges:

DCV: 2.5, 10, 50, 250, 1000V  
ACV: 10, 50, 250, 1000V  
DC (mA): 5, 50, 500, & 10A  
Resistance: x1, x10, x1K  
Battery: 1.5V, 9V  
dB: -8dB to + 22dB  
Continuity  
Cat Q-1022

**\$39<sup>95</sup>**



## Analogue Multimeter 21 Ranges plus dB

An attractive and rugged multimeter with 21 ranges plus dB. It measures AC & DC currents up to 10 amps and measures resistance up to 20M ohms. What's more, it comes with a continuity tester and 20K/volt sensitivity. In addition, it has overload protection and diode & fuse protection. With a 3.5" meter, mirrored ARC scale, tilt stand and a pivot & jewel mechanism, it's a pleasure to use.

- With Carry case
- Sensitivity: 20,000 Ohm/V

### Ranges:

DC Volts: 0.1, 2.5, 10, 50, 250, 1000V  
AC Volts: 10, 50, 250, 1000V  
DC Current: 50 $\mu$ A, 2.5mA, 25mA, 250mA, 10A  
AC Current: 10A  
Resistance: x1, x10, x1K, x10K

Cat Q-1024

**\$54<sup>95</sup>**



## Analogue Multimeter 25 ranges plus dB

A high quality multimeter with a 3 1/2" mirrored scale and 25 ranges plus dB. Safety features include overload protection as well as diode & fuse protection. In addition, it has an automatic TR (transistor) quality and type checker (ie - PNP or NPN), 1.5 & 9V battery checker, continuity test and temperature measurement (-20°C to 150°C). Comes complete with a temperature probe and tilt stand.

- With Carry case
- Sensitivity: 20,000 Ohm/V

### Ranges:

DC Volts: 0.1, 2.5, 10, 50, 250, 1000V  
AC Volts: 10, 50, 250, 1000V  
DC Current: 50 $\mu$ A, 2.5mA, 25mA, 250mA, 10A  
AC Current: 10A  
Resistance: x1, x10, x1K, x10K  
Temperature: -20°C to 150°C

Cat Q-1028

**\$74<sup>95</sup>**





## Reads Pk-Pk & RMS! Electronic FET VOM

Few multimeters can read peak-to-peak voltages and at this price even fewer are electronic, yet this multimeter has both. Electronic metering means versatility, accuracy, and reliability. With its single range switch there's no mad lead swapping every time you want to change measurements. What's more, it's overload protected and has a mirrored 90 degree scale for really accurate reading.

- Full electronic (FET) operation
- High input impedance

### Ranges:

DCV: 0.3, 1.2, 12, 30, 120, 300, 1200V  
(10M ohm input impedance)  
ACV: 3, 12, 30, 120, 300, 1200V  
(plus pk-pk to approx. 1MHz)  
DCA: 0.1uA, 0.3, 3, 30, 300mA, 12A  
ACA: 12A  
Decibels: -10dB to +11dB  
Resistance: x1, x10, x100, x10K, x1Mohms  
AC Bandwidth: 1MHz

12 Month Warranty Cat Q-1143

**\$89<sup>95</sup>**



## 18 Range Digital Multimeter

A pocket-sized multimeter with superb performance that's ideal as a general-purpose meter in the field or around the workshop. It gives a fast response over 18 ranges and features the latest in IC technology, making it a reliable meter in a tiny, lightweight package. Includes a pop-up stand for easy viewing and recessed jacks for extra safety. Comes with test leads.

- 3.5 digit display
- Auto-polarity
- Diode test

### Ranges:

DCV: 2, 20, 200, 1000V  
ACV: 200, 500V  
DC (mA): 2, 20, 200, 10A  
Resistance: 200, 2K, 20K, 200K, 2Mohm  
Batt. test: 1.5 & 9V  
Cat Q-1442

12 Month Warranty

**\$49<sup>95</sup>**



## 14 Range Multimeter

An affordable 3.5 digit multimeter for the hobbyist or student. It has a handy battery checker for 1.5 & 9 volt cells, as well as diode test. Comes in a sturdy safety yellow casing complete with test leads.

- 3.5 Digit Display
- Auto-Polarity
- Diode Test

### Ranges:

DCV: 2V, 20V, 200V, 500V  
ACV: 200, 500V  
DC (mA): 200mA  
Resistance: 2K, 20K, 200K, 2M  
Cat Q-1420

**NEW '93**

**\$29<sup>95</sup>**



## 3.5 Digit Pencil Multimeter

Incredibly compact and unbelievably easy to handle. A pencil-type digital multimeter which measures DC/AC voltages, DC/AC current, and resistance with high accuracy. It includes diode test, audible continuity check, logic test and more. It's ideal for field work, the workshop and hobby use. Comes with test leads and protective case.

- Data Hold
- Auto/manual range selection
- Auto polarity/battery/over range indicator
- Overload protection

### Ranges:

DCV: 200mV, 2, 20, 200, 500V  
ACV: 2, 20, 200, 500V  
DC Current: 200mA  
AC Current: 200mA  
Resistance: 200, 2K, 20K, 200K, 2M, 20Mohm  
Logic Test: CMOS & TTL

12 Month Warranty

Cat Q-1560

**\$59<sup>95</sup>**



## 19 Range Multimeter

It's incredibly compact and easy to use! This accurate 3.5-digit meter measures AC/DC voltages, DC current and resistance. It has a diode test function, 10Amp (DC) current range and a low frequency output range. Features a durable, safety yellow casing.

- 3.5 Digit Display
- Auto-Polarity
- Diode Test

### Ranges:

DCV: 0.2V, 2V, 20V, 200V, 1000V  
ACV: 200, 750V  
DC Current: 200uA, 2000uA, 20mA, 200mA  
Resistance: 200, 2K, 20K, 200K, 2M  
Cat Q-1422

**NEW '93**

**\$39<sup>95</sup>**



## 3.75 Digit 'Pocket-Sized' Multimeter

There are compact meters... and then there's our pocket-sized multimeter (it's about the size of a small calculator). Comes with features such as auto ranging, data hold, diode test and continuity, as well as all the usual DMM features. The small size makes it perfect for field work. Comes with test leads and protective case.

- 3200 count
- Data hold
- Auto/manual ranging and overload protection
- Diode and continuity test

### Ranges:

DCV: 300mV, 3, 30, 300, 450V  
ACV: 3, 30, 300, 450V  
Resistance: 300, 3K, 30K, 300K, 3M, 30M ohm  
Cat Q-1575

12 Month Warranty

**\$69<sup>95</sup>**



# Digital Multimeters

## With Transistor And Diode Test 33 Range Digital Multimeter

Cat Q-1446

**\$79<sup>95</sup>**



33 ranges in a pocket-sized multimeter. This amazing little meter is built for reliability and long life. It uses the very latest in IC technology to deliver a compact and highly accurate meter. Some of the great features include continuity beeper and transistor/diode testing. Comes with test leads.

- 3.5 digit display
- Continuity beeper
- Diode test
- Transistor test

### Ranges:

DCV:	0.2, 2, 20, 200, 1000V
ACV:	0.2, 2, 20, 200, 750V
DC current:	200uA, 2mA, 20mA, 200mA, 10A
AC current:	200uA, 2mA, 20mA, 200mA, 10A
Resistance:	200, 2K, 20K, 200K, 20M, 200M ohm
Trans. check:	Hfe (NPN/PNP)
Batt. test:	1.5 & 9V

## With Analogue Bargraph! 3200 Count Digital Multimeter

Cat Q-1424

**\$99**



A handheld meter with 3.75 digit LCD display and 34 segment analogue bargraph that is ideal for audio technicians. Other outstanding features include: overrange and low battery indication, auto power off and continuity plus diode test. A superbly designed multimeter that comes complete with protective rubber holster.

- 3.75 Digit Display
- Auto/Manual Ranging
- Diode Test
- Continuity Test

### Ranges:

DCV:	320mV, 3.2V, 32V, 320V, 600V
ACV:	3.2V, 32V, 320V, 600V
DC Current:	320uA, 3200uA, 32mA, 320mA, 10A
AC Current:	320uA, 3200uA, 32mA, 320mA, 10A
Resistance:	320, 3.2K, 32K, 3.2M, 32M ohms

## With Protective Rubber Holster 3.5 Digit Multimeter

Cat Q-1426

**\$99**



A powerful, accurate digital multimeter that's built to last! It's pocket-sized and offers a 3.5 digit LCD display with a maximum reading of 1999. It comes complete with protective rubber holster.

- Capacitance Test
- Transistor hFE test
- Diode and continuity test
- Low battery indicator

### Ranges:

DCV:	200mV, 2V, 20V, 200V, 600V
ACV:	200mV, 2V, 20V, 200V, 600V
DC Current:	200uA, 2mA, 20mA, 200mA, 10A
AC Current:	200uA, 2mA, 20mA, 200mA, 10A
Resistance:	200, 2K, 20K, 200K, 20M, 200M ohm
Capacitance:	2nF, 20nF, 200nF, 2uF, 20uF

## 3999 Count Digital Multimeter

Cat Q-1450

**\$109**



A quality multimeter with large 13mm liquid crystal display and pop-out stand. It's compact and features auto-polarity, capacitor/diode/transistor test, logic circuit test, frequency measurement (up to 4MHz), and peak reading hold. The display shows 3.75 digits giving a mammoth 3999 count reading. It includes continuity, and comes with a soft carry case and test leads.

- 3.75 digit display
- Continuity test
- Peak reading hold

### Ranges:

DCV:	400mV, 4V, 40V, 400V, 1000V
ACV:	400mV, 4V, 40V, 400V, 750V
DC Current:	40mA, 400mA, 10A
AC Current:	40mA, 400mA, 10A
Resistance:	400, 4K, 40K, 400K, 4M, 40M, 400Mohms
Trans. check:	Hfe (NPN/PNP)
Capacitance:	4nF, 40nF, 400nF, 4uF, 40uF
Freq. Measure:	Auto-ranging 4k-4MHz (4 scales)
Logic Measure:	TTL type

## With Frequency Counter 3.5 Digit Multimeter

Cat Q-1535

**\$149**



A top value for money multimeter and a popular choice among technicians, TV repairs and hobbyists. With transistor test, frequency counter, capacitance, diode test and test leads.

### Ranges:

DCV:	200mV, 2V, 20, 200, 1000
ACV:	200mV, 2V, 20, 200, 750
Current AC/DC:	200uA, 2mA, 20, 200, 10A
Resistance:	200ohm, 2Kohm, 20, 200, 2Mohm, 20, 2000
Capacitance:	2000pF, 20nF, 200, 2uF, 20
Frequency Counter:	2kHz, 20,200, 2MHz, 20
Transistor hFE:	10uA base current
Continuity, diode & logic test	

## With Large Display! 3.5 Digit Multimeter

Cat Q-1538

**\$159**



A superb 3.5 digit multimeter with large 25mm display and a 20 amp AC/DC current range. It also has auto power off, bargraph display, capacitance meter, transistor tester, diode and continuity tester. The multimeter has side slots to fit test leads for one-handed operation and comes complete with tilt stand and carry case.

### Ranges:

DCV:	200mV, 2, 20, 200, 1000 volts
ACV:	200mV, 2, 20, 200, 750 volts
AC/DC current:	200uA, 2mA, 20mA, 200mA, 20A
Resistance:	200, 2K, 20K, 200K, 2M, 20M ohm.

*All these Meters come with a  
12 Month Warranty*



## 3.75 Digit (4,000 count) Multimeter

A rugged meter that's great for both field and workshop use, it's shock resistant and comes with a rubber holster for maximum protection. It's supplied with a thermocouple probe for temperature measurement from -40°C to 260°C and protective holster, the meter features most standard ranges plus: Continuity, diode, logic, frequency (auto-ranging) and temperature testing, peak hold and auto power-off.

**NEW '93**

Cat Q-1542 **\$179**



### Ranges:

DC V:	400mV, 4V, 40V, 400V, 1000V
AC V:	400mV, 4V, 40V, 400V, 750V
DC Current:	400μA, 4mA, 40mA, 400mA, 20A
AC Current:	400μA, 4mA, 40mA, 400mA, 20A
Resistance (ohms):	400, 4K, 40K, 400K, 4M, 40M
Frequency (auto-ranging):	4KHz, 40KHz, 400KHz, 4000KHz
Temperature:	Thermocouple supplied: -40°C to 260°C (Unit's range: -50°C to 1300°C)

## When Accuracy Counts! 4.5 Digit DMM

When accuracy counts, save time and minimise costly mistakes with this rugged 4.5 digit multimeter. Ideal for all your electronics work, service, design or construction. It measures AC/DC voltage and AC/DC current. As well, it has resistance, capacitance, hFE and continuity tests. The dual-slope A-D converter uses C-MOS technology for auto-zeroing, polarity selection and over-range indication. Ideal for the laboratory, workshop, field or the hobbyist. With test leads and case.

- Highly Accurate (0.05% basic accuracy)
- Frequency measurements
- Function indicators on LCD display
- Auto-zeroing, polarity selection & over-range indication.
- Full overload protection • 15mm high contrast LCD
- Diode and Audible Continuity test • Data hold
- Transistor hFE test • Low battery indicator • Test leads & case



Cat Q-1528 **\$199**

### Ranges:

DCV:	200mV, 2V, 20, 200, 1000
ACV:	200mV, 2V, 20, 200, 750
DC Current:	200μA, 2mA, 200, 20A
AC current:	2mA, 200, 20A
Resistance:	200ohm, 2K, 20K, 200K, 2M, 20M
Capacitance:	2000pF, 200nF, 20uF
Frequency Counter:	20KHz, 200KHz

## Direct Data transfer To Your Computer! DMM With RS-232 Interface

A powerful and high-performance multimeter that's built to take the rough and tumble! What's more, you can finally beat those hard to locate intermittent faults by monitoring and storing the output of your meter on computer. With the provided software you can take readings over time. It can also find and hold minimum and maximum readings as well as measure relative offsets and measure up to a huge 20A (AC/DC). There's a 3.5 digit display plus 20-segment bargraph! Comes with test leads, case, RS-232 connecting cable and computer program disk.

- Interfaces with your PC
- Auto self-test
- Auto power 'off' for longer battery life
- Range selection beeper • Overload indicator
- Data hold & Maximum/Minimum hold
- Relative offset • Diode and continuity
- Transistor, Frequency and logic



Cat Q-1570 **\$215**

### Ranges:

DCV:	200mV, 2V, 20, 200, 1000
ACV:	200mV, 2V, 20, 200, 750
Current AC/DC:	2mA, 200, 20A
Resistance:	200ohm, 2K, 20K, 200K, 2M, 20M
Capacitance:	2000pF, 200nF, 20uF
Frequency Counter:	20KHz, 200KHz

## Digital Multimeter with analogue display!

**NEW '93**

This latest model offers a wide range of features. A sturdy design, it has both LCD digital and analogue displays for easy, accurate readouts, an easy-to-use rotary function switch, built-in exclusive microprocessor IC circuit and built-in overload protection circuit. Plus, it includes data hold (for analogue display only), high-input impedance for both Analogue and Digital modes and overload protection. Tests capacitance, frequency, transistors, diodes, continuity and temperature.

Cat Q-1702 **\$215**

### Ranges:

DCV:	200mV, 2, 20, 200, 1000V
ACV:	200mV, 2, 20, 200, 750V
AC/DC Current:	200uA, 2mA, 20mA, 200mA, 20A
Resistance (ohms):	200, 2K, 20K, 200K, 2000K, 20M

## With data hold Pencil-Style Digital Multimeter

Designed especially for electricians and servicemen, this pencil-style meter will provide reliable service in the harshest of environments. A data hold button allows the meter to go places your eyes can't follow and still come back with a reading, plus a bright LED warning lamp is provided in addition to a beeper to warn of dangerous voltages.

- Features:
- 3.5 digit display • Auto off • Data hold and reset buttons
  - Dangerous voltage LED and beeper
  - Logic, diode and continuity test

Cat Q-1580 **\$149**

### Ranges:

DCV:	2, 200, 1000V
ACV:	2, 200, 750V
Resistance:	200ohm, 2Kohm
Capacitance:	200uF



## Analogue Clamp meter

A versatile 11-range multimeter for measuring AC current, AC voltage, resistance, plus DC voltage. With pointer lock device to freeze reading and large 34mm measuring jaw. It includes a wrist strap for single-handed use, test leads, instructions and a protective carry-case.

Cat Q-1472 **\$89<sup>95</sup>**

### Ranges:

AC current:	6, 15, 60, 150, 300A
AC voltage:	150, 300, 750V
DC voltage:	75V
Resistance:	x1, x100 ohms

**NEW '93**



## Universal Multimeter Carry-Cases

Zippered cases to suit many different types of multimeters and their test leads.

Medium size, black in colour  
Large size, grey in colour

Cat Q-1990 **\$14<sup>95</sup> ea**  
Cat Q-1992



## AC Current Clamp Meter Accessory

Add an AC current range to your Digitor Pencil-style meter (Q-1580). This device is designed to snap directly onto the end of the pencil meter or use the lead set supplied to operate the clamp head as a split system.

Range: Current: 300A (AC only) **\$39<sup>95</sup>**  
Cat Q-1590



## Digital Clamp Meter

A quality 11-range multimeter that's ideal for measuring heavy currents and voltages without breaking into the circuit. An easy-to-use data hold switch lets you take a reading without seeing the display. A fast 3 samples per second measuring rate will ensure you get quick, reliable readings every time. With overload protection on all ranges plus diode, resistance and continuity testing.

- Clamp reading current • Diode and continuity testing
- Wrist strap for single-handed use.

Cat Q-1470 **\$129**

### Ranges:

DCV:	0.2, 200, 1000V	AC current:	20, 200, 300A
ACV:	200, 750	Resistance:	200, 200K ohms



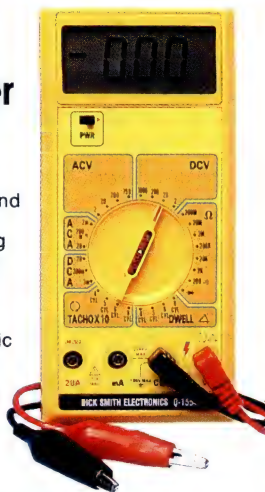


## Digital Engine Analyser

A sturdy and well constructed engine analyser for do-it-yourself car service and maintenance. It's designed for checking the RPM, dwell angle, points, as well as the battery charging system. With a large LCD screen, automatic zero adjustment, automatic polarity switching, 0.4 second sampling time, case and test leads.

### Features

3.5 digit display  
DC V 2V, 20V, 200V, 1000V  
AC V 2V, 20V, 200V, 750V  
ACA/DCA 2mA, 200mA, 20A  
Tacho 4, 5, 6 & 8 Cylinders  
Dwell 4, 5, 6 & 8 Cylinders  
Resistances 200, 2K, 20K, 200K, 2M, 20M, 200M.  
Diode and Continuity Test



**\$129**

Cat Q-1554

## Digital Capacitance Meter

A portable capacitance meter with a 3.5 digit LCD screen. Use it to check tolerances, sort values, select precision values, measure unmarked capacitors and select matched sets. As well you can use it for measuring cable, switch or PCB capacitance. It comes complete with test leads and a 9V battery which provides up to 200 hours of operating use. In addition, an onscreen battery indicator tells you when battery level is low and your battery needs replacing. With zero capacitance adjustment knob, push-free turn range select switches, '+' & '-' input connectors, capacitance of 0.1pF to 20mF and a soft carry case.



Cat Q-1224

**\$129**

## Twin Input Digital Thermometer

An outstanding hand-held lightweight thermometer that's made to last! Ideal for field work, this rugged unit is housed in a robust case and protected by a rubber holster. It features a dual thermocouple input for differential temperature measurements and it is switchable between °C/°F. Plus, it offers display reading hold and maximum record hold.



### Features:

Display: 3.5 digit LCD  
Measurement Range:

'K' type thermocouple  
Bead probe (as supplied)  
-40°C to 260°C  
Unit capability  
-50° to 1300°C

Temperature Scale: °C or °F  
Comes complete with 2 'K' type thermocouple probes.

**\$129**

Cat Q-1434

**'93**

## Digital Thermometer

A highly accurate and rugged thermometer which is ideal for measuring the temperature of surfaces, semi-solids and non corrosive liquids, etc. It's suitable for science labs, ovens and freezers, etc. It has a thermocouple probe, an easy to read 3.5 digit LCD screen and a soft carry case. The thermocouple probe supplied, has a range of -40°C to 250°C while the thermometer itself has a range of -50°C to 1200°C.



Cat Q-1432

**\$109**

## 60MHz Universal CRO Probes

If you own a CRO or need replacement or additional probes then you'll appreciate these! A universal probe with x1/x10 switch. It has wandering earth lead, insulated shroud and comes with a handy carry pouch.

Working Voltage: 600V AC p-p (x10)  
Input Capacitance: 170pf (x1), 27pf (x10)  
Input Resistance: 9Mohm (x10)  
Bandwidth: 60MHz



Cat Q-1247

**\$32<sup>95</sup>**

## 100MHz Universal CRO Probes

This probe is identical to the Q-1247 except that it measures up to 100MHz. With a wandering earth lead, insulated shroud sprung hook and a handy carry pouch.

Working Voltage: 600V AC p-p (x10)  
Input Capacitance: 150pf (x1) & 18pf (x10)  
Input Resistance: 9M ohm (x10)  
Bandwidth: 100MHz



Cat Q-1249

**\$39<sup>95</sup>**

## Digital LCR Meter

A reliable 3.75 digit multimeter from Dick Smith Electronics. You can use it to measure inductance, capacitance, resistance, voltage, logic, and frequency. Its features include AC/DC voltage measurements and diode and continuity testers. With an AC/DC current range of up to 20 Amps and peak hold. Comes complete with a pair of test leads, spare fuse, 9V battery and comprehensive instructions.

### Features:

- 3.75 digit display
- Auto polarity indication
- Peak hold
- 20 Amp Current range
- Inductance measurement
- Diode/continuity & logic test

### Ranges:

DCV: 400mV, 4V, 40V, 400V, 1000V  
ACV: 400mV, 4V, 40V, 400V, 750V  
AC/DC Amps: 400uA, 4mA, 40mA, 400mA, 20A  
Resistance: 400, 4K, 40K, 400K, 4M, 40M  
Inductance: 4mH, 40mH, 400mH, 4H, 40H  
Capacitance: 4nF, 40nF, 400nF, 4uF, 40uF  
Frequency: Auto-ranging

Cat Q-1558

**\$159**

**'93**



## Digital Light Meter

Ideal for photographers, video makers and photo labs. It quickly, and accurately measures light up to 50,000 LUX over three ranges. Features auto zero, low battery indicator and comes complete with carry case. Requires 1 x 9 volt battery (gives 150-200 hours continuous use).

Cat Q-1400

**\$129**

## CRO Probe Accessory Pack

Just about everything you need should your CRO probe break-down, or go A.W.O.L. It's also an inexpensive way to get greater probe flexibility, so you can do just about anything.

Includes a channel identifier clip, BNC adaptor, insulating tip, IC adaptor and adjusting tool. As well, you get an additional sprung hook, ground lead and measuring tip.



Cat Q-1246

**\$13<sup>95</sup>**



## With component tester!

### 60 MHz Dual Timebase CRO

A superbly built oscilloscope which has the performance and features to handle engineering, technical, and design applications. For anyone working on CB radios, high frequency transceivers and high speed computers, this one's a must. With dual time base you can make more accurate timing measurements and you can compare portions of a signal at two different sweep speeds. You also get jitter-free triggering of delay sweeps, and front panel adjustable trace rotation. The Beam Finder allows you to find the trace on the screen at the touch of a button. What's more, you can test capacitors, inductors, diodes, transistors, Zeners, etc easily and quickly. There's also adjustable illumination of the screen grid so you can use it in virtually any lighting situation. Complete with two probes.

#### Specifications

Sensitivity: 1 mV/DIV - 1 V/DIV (20MHz, -3db), x 5 gain selected. 5mV/DIV - 5 V/DIV  
 Rise Time: 5mV/DIV - 5V/DIV: 5.8ns  
 1mV/DIV: 17.5ns  
 Hold Off Time: Variable  
 Main Sweep Speed: 0.1 uS/DIV - 0.2S/DIV in 1-2-5 sequence, 20 steps  
 Delay Sweep Speed: 0.1 uS/DIV - 0.2 S/DIV in 1-2-5 sequence, 20 steps  
 Sweep Magnification: 10X  
 Operating Modes: CH1, CH2, Alt, Chop  
 Trigger Coupling: AUTO, NORM, TV-V, TV-H  
 Trigger Source: CH1, CH2, ALT, LINE, EXT.

Cat Q-1806

**\$1599**



### Budget 6.5MHz CRO

A budget priced instrument that's great for service, repair and design work. At 6.5MHz, it's suitable for audio work, project builders, classroom applications, etc. Features include retrace blanking for a clearer display and internal or external sync. Low drift and quick warm-up make it the ideal service tool.

#### Specifications:

Vertical bandwidth: DC to 6.5MHz (-3dB)  
 Attenuator: 1/1, 1/10, 1/100 and ground  
 Horizontal sensitivity: 250mV/div or more  
 Timebase: 10Hz to 100kHz  
 Sync: External or internal  
 Input Impedance: 1 Meg/35pF

Cat Q-1280 **Just \$449**



### Dual trace, dual trigger 20 MHz CRO

An affordable 20MHz oscilloscope that's suitable for a wide range of applications. It's a dual trace, dual trigger CRO with a fully adjustable sweep time (in 20 steps), variable hold-off, fully adjustable sensitivity, switch selectable X-Y operation, selectable trigger modes, AC/TV H/TV V trigger coupling, front-panel variable trace rotation and a sweep rate from 10nS/DIV to 1S/DIV. A quality CRO that you can afford to put on your workbench. Complete with two probes.

#### Specifications

Vertical Sensitivity: 5 mV/div to 5 V/div (x1 mode)  
 1 mV/div to 1 V/div (x5 mode)  
 1-2-5 sequence, 10 step attenuator.  
 0.1 uS/DIV to 0.2 S/DIV in 1-2-5 sequence, 20 steps  
 Sweep Speed: 0.1 uS/DIV to 0.2 S/DIV in 1-2-5 sequence, 20 steps  
 Sweep Magnification: 10X  
 Rise Time: Approximately 17.5ns  
 Operating Modes: CH1, CH2, Alt, Chop, Add  
 Trigger Coupling: AC, TV-H, TV-V  
 Trigger Sensitivity: 0.5 division (1 division with TV coupling)  
 - Internal: 500mV  
 External: 500mV  
 Trigger Source: CH1, CH2, Alt, Ext, Line.

Cat Q-1802

**\$699**



### Dual timebase Full Featured 20 MHz CRO

A great range of features make this 20MHz CRO the perfect choice for serious design, fault finding and repair applications. Quality features include a beam-finder so you can bring the trace pattern back onto the screen instantly, dual time base for more accurate timing measurements, switch selectable X-Y axis, variable hold-off time, sweep magnification (x10) which allows you to extend the sweep speed up to 10ns/div, front-panel adjustable trace rotation and advanced triggering capabilities. What's more, it has an adjustable illuminated grid and an inbuilt component tester for capacitors, inductors, transistors, diodes, zeners etc. Complete with 2 probes.

#### Specifications

Sensitivity: 1mV/Div - 1V/Div (10MHz, -3dB) x5 gain select. 5mV/Div - 5V/Div  
 Less than 17.5ns  
 Rise Time: 0.1uS/Div - 0.2S/Div, 1-2-5 sequence, 20 steps.  
 Sweep Magnification: 10X  
 Operating Modes: CH1, CH2, Alt, Chop  
 Trigger Coupling: Auto, Norm, TV-V, TV-H  
 Trigger Source: CH1, CH2, Alt, Line, Ext.

Cat Q-1804

**\$899**



### 20MHz Digital Storage CRO

An analogue CRO that becomes a digital CRO at the touch of a button, yet retains all of the advantages of analogue operation. Digital storage allows you to capture and store very fast variations in waveform in order to examine them in detail or compare them to other waveforms. This is particularly useful for fault finding (intermittent faults are much easier to isolate), design and experimentation, etc. With fully adjustable sweep speed (21 steps), x10 sweep magnification, variable hold-off, auto/TV-H/TV-V trigger coupling, front-panel adjustable trace rotation, plotter output, pushbutton selectable pre-trigger (0%, 25%, 50% & 75%) and pushbutton slow magnification selection (x100). Complete with 2 probes.

Sensitivity: 5 mV/div to 5V/div (X1 mode)  
 1 mV/div to 1 V/div (X5 mode)  
 1-2-5 sequence, 10 step attenuator  
 Rise Time: Approx 17.5ns  
 Sweep Speed: 0.1uS/Div to 0.5S/Div in 1-2-5 sequence, 21 steps  
 Sweep Magnification: 10X  
 Operating Modes: CH1, CH2, ALT, CHOP, ADD  
 Trigger Coupling: Auto (AC), TV-H, TV-V  
 Trigger Source: CH1, CH2, Alt, Ext, Line

#### Digital Specifications

Memory: 2K words per channel (2x 2048 x 8 bit)  
 Maximum Sampling Rate: 10M sample/sec  
 DSO Timebase: 0.1uS/DIV to 0.5S/DIV (21 ranges)  
 Slow x100: 10mS/DIV - 0.5S/DIV (6 range) extend to 50S/DIV  
 Equivalent Mode Range: 50uS/Div to 0.1uS/Div (9 range)  
 Operating Mode: Roll, Save All, Save CH2, X-Y, Single, Pre-Trig (0%, 25% 50% 75%) Plot Out

Cat Q-1808

**\$1599**



# FLUKE

'Regarded by industry professionals as the most forgiving multimeters ever made!'

## Fluke 87 Digital Multimeter

Once you've used the sensational Fluke 87 multimeter...you'll wish all your test gear performed so well. You can't help but appreciate the superb engineering, the outstanding performance, the unequalled reliability and flexibility.

It's the subtleties of design and manufacture which very quickly become apparent. You may not be able to see them, indeed you may not know exactly what they are... but you'll appreciate them for many years to come. That's because a Fluke DMM will be around for longer and, in the long run, work out to be far less expensive than your average multimeter.

Some of the Fluke 87's many features include fast 3 3/4 digit 4000 count mode, high resolution 4 1/2 digit 20000 count mode, backlit display with fast, high resolution analogue bar graph, 0.1% basic DC accuracy, 20kHz bandwidth true RMS, Min/Max/Average (up to 36 hours) recording, 1000V RMS input protection, 'Touch Hold', Min/Max Alert and much more!

### Features:

- Fast 3 3/4 digit 4000 count mode
- High resolution 4.5 Digit 20000 count mode
- Back-lit display with fast, high resolution bar graph
- 0.1% basic DC accuracy

### Specifications:

Voltage:	400mV, 4V, 40V, 400V, 1000V
DC Accuracy:	+/- (0.1% + 1 digit)
AC Accuracy:	50Hz - 60Hz +/- (0.7% + 4 digits), 45Hz - 20kHz +/- (2% + 4 digits)
Current:	400uA, 4000uA, 40mA, 400mA, 4000mA, 10A (20A <30sec.)
DC Accuracy:	+/- (0.2% + 2 digits)
AC Accuracy:	+/- (1.0% + 2 digits), (45 - 2000Hz)
Resistance:	400, 4k, 40k, 400k, 4M, 40M ohms.
Conductance:	40nS
Continuity:	Continuous Tone for resistance < 20 ohm
Diode Test:	Voltage Drop up to 3V
Capacitance:	5nF, 0.05uF, 0.5uF, 5uF
Frequency:	200Hz (0.01Hz resolution), 2k, 20k, 200kHz
Duty Cycle:	0.1% to 99.9%
Min/Max Recording:	1sec, 100ms & 1ms modes
Average Recording:	True Average up to 36 hours

- 20kHz bandwidth True RMS
- Min/Max/Average (up to 36 hours) recording
- 1000V RMS input protection with input Alert
- Touch Hold, Min Max Alert & Relative modes
- Splash-proof, dust-proof & EMI shielded

### General

AC Conversion:	True RMS
Crest Factor:	Up to 3 @ full scale, 6 @ half scale
Update rate:	4000 count - 4 per sec. 20000 count - 1 per sec. Frequency - 1.5 per sec. Duty Cycle - 1.5 per sec. Bar Graph - 40 per sec.

**3 Year Warranty**

**\$719**

Cat Q-1610

**Dick Smith Electronics**  
**Top-of-the-line!**



## 70 SERIES II FLUKE MULTIMETERS

The all new Series II Fluke professional quality multimeters give you better value, better performance and more features than ever before. All of the '70 Series II' meters now have 'Touch Hold', Diode Test, Continuity beeper, Automatic Self Test, Sleeper Function and exceptionally long battery life as standard features.

## Flexibility plus! Fluke 77 Series II

The new Fluke 77 Series II now has an improved DC voltage range accuracy of 0.3% + 1 (320mV to 320.0V). Add to this the new design which makes it even easier to use than ever before, the comprehensive liquid crystal display which gives you visual confirmation of most features, 3200 count display and incredibly rugged construction and you've got the ideal meter for tradesman and technician alike.

### Specifications:

DCV:	320mV, 3.2V, 32V, 320V, 1000V
Accuracy:	0.3% + 1 (320mV to 320V) 0.4% + 1 (1000V)
ACV:	3.2V, 32V, 320V, 750V
DCA:	32mA, 320mA, 10A (10A continuous or 20A for 30 sec. max.)
ACA:	32mA, 320mA, 10A (10A continuous or 20A for 30 sec. max.)
Resistance:	320ohm, 3.2kohm, 32k, 320K, 3.2Mohm, 32Mohm

**3 Year Warranty**

**\$359**

Cat Q-1607





## FLUKE

### Super accurate! Fluke 75 Series II

A professional quality digital multimeter with a 31 segment analogue bar graph. Never before has such value, performance and features been available in one multimeter. It has all the series II features including 'touch hold', diode test, continuity beeper, auto self test and more. When tight tolerances are essential the Fluke 75 delivers. With accuracy levels at 0.4% for DC voltage, 2.0% for AC voltage, 1.5% DC current (32mA to 10A) and basic resistance at 0.5%.

Cat Q-1605

#### Specifications

##### 3200 Count Display

DCV: 320mV, 3.2V, 32V, 320V, 1000V  
(+/- 0.4% +1)  
ACV: 3.2V, 32V, 320V, 750V  
Resistance: 320 Ohm, 3.2K Ohm, 32K Ohm, 320K Ohm, 3.2M Ohm, 32M Ohm  
DCA: 32mA, 320mA, 10A  
ACA: 32mA, 320mA, 10A

**\$329**

**3 Year Warranty**



## FLUKE

### With touch control Fluke 73 Series II

An improved design, a 3200 count display and a 31 segment analogue bar graph are just some of the reasons why the Fluke 73 is so superb. Like all the Series II Fluke's it has 'touch hold', 'diode test', continuity beeper, auto self test and sleeper function. What's more, it has auto range, auto polarity and it's designed to make operation as easy as possible. With a current range up to 10A and voltage ranges up to 1000V (AC) & 750V (DC) it's ideal for tradesmen or serious hobbyists.

Cat Q-1603

#### Specifications

##### 3200 count display

DCV: 320mV, 3.2V, 32V, 320V, 1000V  
(+/- 0.4% +1)  
ACV: 3.2V, 32V, 320V, 750V  
Resistance: 320 Ohm, 3.2K Ohm, 32K Ohm, 320K Ohm, 3.2M Ohm, 32M Ohm  
DCA: 10A  
ACA: 10A

**\$219**

**3 Year Warranty**



## FLUKE

### Fluke 12 Multimeter

When the going gets tough, you can count on the Fluke 12 for fast answers in complex electronic environments. With a 3 3/4 digit (4000 count) display and a V-check which automatically changes modes. What's more, it has continuity capture which records intermittent opens and shorts as brief as 250mS. In addition, the min/max record and time stamp lets you capture precisely what occurred and when. Hook it up, walk away, then come back and find out what happened... it's that easy! With all the features of the Fluke 10, including auto and manual ranging, the Fluke 12 is truly affordable excellence.

Cat Q-1612

#### Specifications

DCV: 4000mV, 4V, 40V, 400V, 600V  
Accuracy: (0.9% +2 for 4000mV & 4V range) (0.9% +1 for 40V, 400V & 600V ranges)  
ACV: 4000mV, 4V, 40V, 400V, 600V  
Resistance: 400 Ohm, 4K Ohm, 40K Ohm, 400K Ohm, 4M Ohm, 40M Ohm  
Capacitance: 1uF, 10uF, 100uF, 1000uF, 10,000uF

**\$179**

**2 Year Warranty**



## FLUKE

### Fluke 10 Multimeter

A tough and dependable multimeter designed for true one-hand operation. It has a 3 3/4 digit (4000 count) display, as well as auto and manual ranging. With AC/DC voltage measurements (to 600 volts), continuity beeper, Ohms & diode tester, digital display, auto & manual ranging and overload protection. The Fluke 10, a new generation in speed, versatility and value.

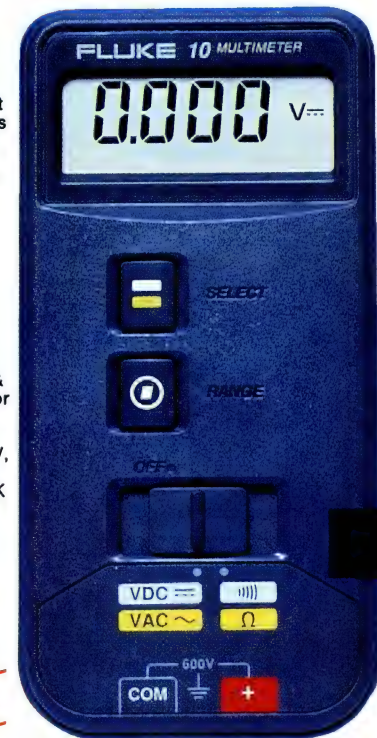
Cat Q-1611

#### Specifications

DCV: 4000mV, 4V, 40V, 400V, 600V  
Accuracy: (1.5% +2 for 4000mV & 4V ranges) (1.5% +1 for 40V, 400V & 600V ranges)  
ACV: 4000mV, 4V, 40V, 400V, 600V  
Resistance: 400 Ohm, 4K Ohm, 40K Ohm, 400K Ohm, 4M Ohm, 40M Ohm

**\$119**

**2 Year Warranty**





## TEMPERATURE



### Air Probe

For air and gases. The measuring bead is protected by a perforated stainless steel baffle. Measuring range:  $-196^{\circ}\text{C}$  to  $816^{\circ}\text{C}$ . Not suitable for liquids. Cat Q-1686

**\$139**

### Thermocouple Module

Converts any 10M ohm DMM into a thermometer via standard banana plugs. Uses K-type thermocouple with mini-connectors. Switch selectable  $^{\circ}\text{C}$  &  $^{\circ}\text{F}$ . It's used with interchangeable probes (Q-1684/1686). Cat Q-1682

**\$159**

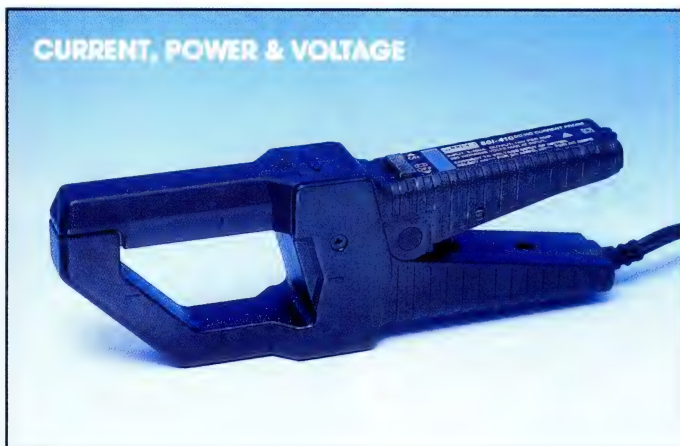
### Immersion Probe

For liquids and gels. Protected from tip to handle by Inconel sheath. It can be used in most general temperature measurement applications. Range:  $-196^{\circ}\text{C}$  to  $927^{\circ}\text{C}$

Cat Q-1684

**\$109**

## CURRENT, POWER & VOLTAGE



### Clamp-On AC/DC Current Probe

For conductors up to 30mm. Output is 1mV per amp DC or AC. Accuracy:  $\pm 1\%$  (5% + 2.5A), 5A to 400A, DC to 62Hz. Usable to 400Hz. Cat Q-1672

**\$379**

# FLUKE

## LEADS AND CLIPS



### Industrial Test Lead Set

Silicon insulated test leads (63" long). With shrouded right-angle connectors, interchangeable stainless steel test probes and safety alligator clips. Cat Q-1652

**\$89**

### Deluxe Test Lead Kit

Everything in a handy soft carry pouch. Comes with interchangeable tips - 2 alligator clips, 2 spade lugs, 1 retractable hook tip & 2 standard pointed tips. Includes shrouded banana plugs. Cat Q-1658

**\$79<sup>95</sup>**

### Right-Angle Test Leads

Shrouded input plugs which will not pull out of meter during use. Single piece construction. 1 metre long. Cat Q-1650

**\$24<sup>95</sup>**

### Alligator Clips

Set of two black and two red slip-on clips for right-angle test leads. Cat Q-1660

**\$14<sup>95</sup>**

### High Voltage Probe

Measuring high voltages made easy and safe. Division ratio is 1000:1. Measures up to 40kV or 28kV RMS AC. Has 1000M ohm input resistance. Cat Q-1690

**\$229**



### 70 Series Holster

Suits any of the Fluke 70 series DMMs. Lead and probe storage on back. With tilt stand and belt hook. Cat Q-1663

**\$39<sup>95</sup>**



### Series 10 Holster

Snap your meter into this yellow holster and it will absorb shocks and protect it against damage. With tilt stand and a moulded hanger loop which can be used as a probe holder. Cat Q-1614

**\$26<sup>95</sup>**

### 70 Series Protective Softcase

Suitable for any of the Fluke meters, even in the holster above. Water resistant zipper, with pockets for leads and small accessories. Cat Q-1664

**\$49<sup>95</sup>**

### Series 10 Protective Softcase

The best way to keep your Fluke series 10 meter safe and organised. There's room for leads and small accessories as well. Cat Q-1616

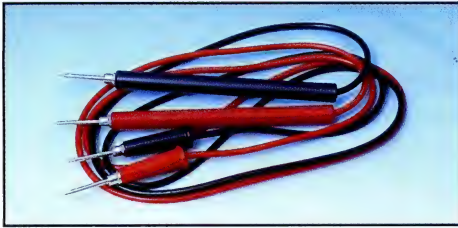
**\$26<sup>95</sup>**

## FLUKE Fuses

Replacement fuses for your quality Fluke meters.

Suits	Description	Cat No	Price
Fluke 73,75,77 & 87	(KTK 15) 15A/600V	P-7884	<b>\$19.95</b>
Fluke 87	(BBS-1) 1A/600V	P-7882	<b>\$9.95</b>
Fluke 75 & 77	(GDA-630) 630mA/250V	P-7880	<b>\$3.95</b>

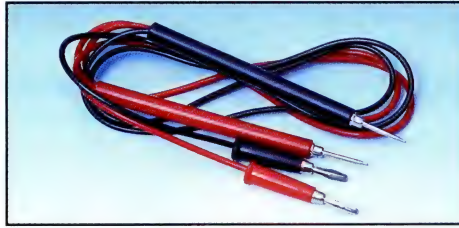




## Lead Set With Tip Plugs

900mm lead set fitted with standard 'tip' ends (100mm long probes and 20mm long points) and 1.5mm multimeter terminal points on the other. Suitable for a wide range of multimeters.

Cat Q-1910 **\$4<sup>95</sup>**



## Leads With Banana Plugs

As used on most modern digital multimeters. 900mm leads fitted with standard probes and 4mm banana plugs. The banana plugs make them suitable for a large range of bench meters and other test equipment as well.

Cat Q-1912 **\$4<sup>95</sup>**



## IC Clip Test Leads

900mm test leads fitted with 4mm banana plugs one end and insulated IC clips on the other. Allows you to hook-on and leaves your hands free for adjustments, etc. Max 50V.

Cat Q-1914 **\$5<sup>95</sup>**



## Self Retracting Coiled Lead Set

Saves the hassle of leads cluttering up the workbench. These coiled leads spring back into shape after they've been extended. Red and black with banana plugs.

Cat Q-1916 **\$9<sup>95</sup>**



**High Quality Test Leads** Designed especially for the latest digital multimeters. With alligator clips, fully shrouded right-angle meter plugs, 1.1 metre cables and a unique threaded 1.5mm probe with 100mm handle - it allows you to fit other tips. Puncture tested to 3.5K volts. Cat Q-1920

**\$10<sup>95</sup>**

**Also Available:** Replacement leads as above (without alligator clips). Cat Q-1918

**\$9<sup>95</sup>**



## BNC to Alligator Clip Leads

Quality universal test leads which are ideal for using with oscilloscopes, generators, frequency counters and any device which has a BNC socket. With RG-58A/U coaxial cable and colour coded (red/black) alligator clips.

Cat Q-1905 **\$10<sup>95</sup>**



## Banana to Alligator Clip Leads

Ideal for most power supplies, generators and instruments which have banana plug sockets. With quality RG-58/U coaxial cable.

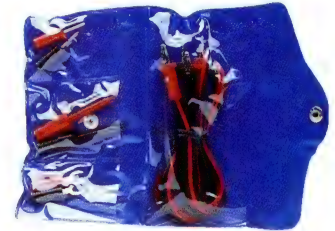
Cat Q-1907 **\$8<sup>95</sup>**



## Spade Lugs to Alligator Clip Leads

Colour coded alligator to spade lugs which are suitable for power supplies, etc. Spade lugs are ideal for use with binding posts.

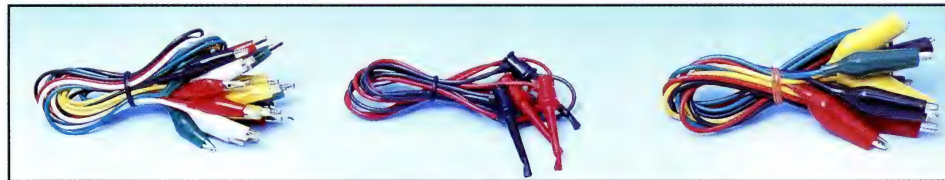
Cat 1908 **\$6<sup>95</sup>**



## Budget Multi-Lead Set

A great idea! A pair of (Red & Black) 1.2m test leads with 4mm banana plugs one end and 1.5mm probes the other. There's also a pair of E-Z hooks and a pair of spade lugs... the probes simply plug into the back of these and you've instantly changed the probe type. It's simple and works well. Comes in a plastic wallet.

Cat Q-1930 **\$10<sup>95</sup>**



## Light Duty

Colour coded, 10 piece jumper set fitted each end with small insulated alligator clips.

Cat Q-1900 **\$7<sup>95</sup>**

## IC Test Clip Type

Two colour coded leads fitted with right-angle claw hooks on each end.

Cat Q-1904 **\$6<sup>95</sup>**

## Medium Duty

4 piece, colour coded jumper set fitted with medium alligator clips. Ideal for those circuits with a little more 'beef'.

Cat Q-1902 **\$7<sup>95</sup>**



## With removable tips Test Lead Set

With removable tips you can use these leads as extension leads or interchange the tips. 1 metre cables with right angle shielded banana plugs.

Cat Q-1592 **\$9<sup>95</sup>**



## Alligator Clips

Shielded Alligator Clip set with 230mm cables and right angle shielded banana plugs. They're just the thing when testing components and you need more than two hands.

Cat Q-1594 **\$6<sup>95</sup>**



## Universal Test Lead Set

Professional quality test leads for virtually any application in one screw-together system. Suitable for most meters and test gear. You get...Coiled Leads with insulated handles on both ends. 4 x 18mm (long) 1.5mm probes. Spade lugs. Alligator clips. Banana plugs and Right-angle adaptors. Housed in a plastic wallet.

Cat Q-1935 **\$28<sup>95</sup>**





## Wideband RF Signal Generator

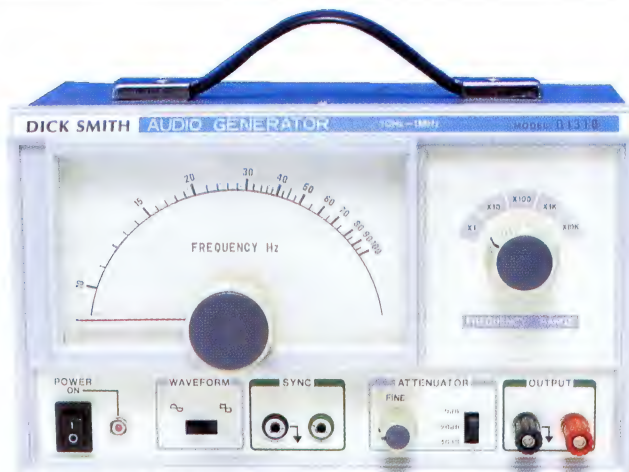
Ideal for hobbyists, amateurs and servicemen. It has a frequency range of 100kHz to 150MHz in 6 ranges making it ideal for checking and aligning IF circuits in tuners and TV sets plus all the other service and development work you'd like to tackle.

### Specifications

RF frequency Range: 100kHz - 150MHz in 6 ranges (up to 450MHz using 3rd harmonics)  
 RF Output Level: At least 100mV up to 35MHz  
 RF Output Imp: <500ohms on high output 75ohms on low (approx)  
 Int. Modulation: AM, 1kHz, 30%  
 Ext. Modulation: AM, 50Hz - 15kHz, <1Vrms for RF >30MHz  
 AF Output: 1kHz, >1Vrms  
 AF Output Imp: Approx. 10Kohms in series with 10uF

**\$279**

Cat Q-1312



## AF Signal Generator

An audio frequency generator like this one is an essential tool for working on many circuits. With a wide 20Hz to 200kHz output and high accuracy, our signal generator is sure to become an important part of your test equipment arsenal. Team it up with our RF generator and soon it'll become one of your most important tools.

### Specifications

Freq. Range: 10Hz to 1MHz  
 Accuracy: +/-3% +2Hz  
 Output Imp: 470 - 1100 ohms unbalanced  
 Output Control: 0, -20db, -40db approx. Plus fine adjustment

Sine Wave Output-  
 Range: 10Hz to 1MHz  
 Output: >7.8Vrms unloaded  
 >4.3Vrms into 600ohms  
 Distortion: <0.1% 500Hz - 50kHz  
 <0.5% 50Hz - 500kHz

Square Wave Output-  
 Range: 10Hz to 10kHz  
 Output Voltage: >15Vp-p unloaded  
 >6Vp-p into 600ohms  
 Rise Time: <0.5uS into 600ohms in parallel with 400pF

**\$289**

Cat Q-1310



## 1.25GHz Handheld Digital Frequency Counter

Ideal for measuring radio frequency transmissions and servicing stereos, videos, computers and cordless phones. This incredibly easy to use 10Hz to 1.25GHz frequency counter has an 8-digit LCD display, data hold, relative measurement and data record (min, max & average). There's also selectable resolution, period measurement and more. Comes complete with telescopic antenna and BNC to alligator clip test leads.

### Specifications

Range: 10Hz to 1.25 GHz  
 Impedance: 1M OHM  
 Accuracy: +/- (1PPM + 1d)

Range: Channel A: 500MHz/1250MHz  
 Channel B: 10MHz (10Hz to 10MHz)  
 Typical Sensitivity: Channel A: 10-1000 MHz (3-50mV RMS) = 1-1.25GHz (10 - 150mV RMS)  
 Channel B: 10Hz-1MHz (15mV RMS) 1MHz-5MHz (20mV) 5MHz-10MHz (40mV)  
 Max Voltage: Channel A: 5V P-P  
 Channel B: 250V p-p

**\$229**

Cat Q-1322

## With Period Counter!

## 1 GHz Digital Frequency Meter

Searching for a frequency meter that can do it all?... look no further! Measures from a phenomenal 0.1Hz to an amazing 1GHz. This meter will measure it all, in a fraction of a second, with a minimum 5 digit accuracy right across the range... from subsonic to ultrasonic. Packed with unique features, it has the accuracy and specifications to out perform just about any meter in its class. High resolution and fast response time make it a must for the workshop.

Input Char CH.A-  
 Freq. Range:

DC couple 0.1Hz to 80MHz  
 AC couple 30Hz to 80MHz  
 15mV RMS 0.1Hz to 50MHz  
 25mV RMS 50MHz to 80MHz  
 AC/DC

Sensitivity:

Coupling:

Filter: Low pass (100kHz, -3db)

Input Imped: 1Mohm/40pF

Attenuator: x1, x20

Trig. Mode: Auto or manual

Period Range: 10ns to 10 seconds

Input Char CH B-

Freq. Range: 50MHz to 1GHz

Sensitivity: 20mV to 650MHz

55mV to 1GHz

Coupling:

Input Imped:

Max. Input:

Resolution:

Timebase:

Frequency:

Aging Rate:

Coefficient:

Accuracy:

Line Var:

Gate Time:

AC only

50ohms

3Vrms

Minimum 5 digits at minimum gate time setting.

10MHz

1PPM per month

10PPM, 0°C-40°C

50PPM

0.1PPM for line voltage +/-10%

Variable from 60ms to 10s or 1 period of input signal, whichever is longer.



**\$499**

Cat Q-1314



## Compumeter

A great idea for homebuyers, tradesmen, architects and anyone who works on quotations. Compumeter is an ultrasonic tape measure which makes measuring distances from 55cm to 12.5m as easy as pressing a button. It has a 5 digit LCD screen which shows metric/imperial measurements and modes. As well, it has addition, area/volume calculations and memory functions. Accuracy is to 0.5% and it requires a 9V battery.



Cat Q-1407

**\$64<sup>95</sup>**



## LCD Digital Callipers

Cat Q-1412

**\$179**

A hi-tech precision tool for engineers, designers, students and the serious hobbyist. These callipers give an extremely precise measurement of the external and internal diameter of just about anything from 0.01mm to 150mm. With metric/imperial conversion, zero setting for measuring deviations, accuracy of 0.03mm and repeatability of 0.01mm. As well, it has an automatic 'off' function and more!

## Radioactivity Monitor

How much radioactivity is in your environment? On its LCD display, this handy monitor indicates the level of radioactivity you are exposed to. It's compact and easy to carry! Plus, it detects beta and gamma ray radiation and offers 2 measurement modes: "counts per second" and "accumulated counts".

### Specifications

**Sensor:** Geiger-Mueller tube  
**Detection:** Beta, gamma ray radiation  
**Counter:** 0-999 LCD display  
**Alarm Level:** 0.063 MR/H (milli Roentogen per hour)  
**Measuring Time:** Count - 64 sec. Accumulated - continuous count until manual switch off.  
**Temp Range:** -10 to 50°C (14°F to 122°F)  
**Power Supply:** 9V battery

**NEW '93**



**\$119**

Cat Q-1402

### Fits in your hand

## Temperature To Voltage Convertor

Incredibly handy for labs, air conditioner service people... in fact anyone who works with heat or heat exchange. It's used in conjunction with a voltmeter (multimeter) and requires a 9V battery. Complete with bead type thermocouple (Maximum insulation temperature 260°C) on a 1.2m lead with K-type connector.

### Specification:

**Resolution:** 0.1°C/F to 200mV range  
 1°C/F at 2V range

### Units

**Measuring Range:** -50°C to 1300°C (-58°F to 2372°F)

Cat Q-1430



**\$64<sup>95</sup>**

## Air Speed Turbo Meter

A highly accurate wind speed meter small enough to fit in the palm of your hand! The Turbo Meter produces an easy to read digital display of wind speed in knots, miles per hour, meters per second or feet per minute. It can be used for a variety of purposes including; boating, aviation, sports, science projects, and hobbyists experiments. To insure maximum sensitivity and accuracy, the turbine is suspended on sapphire jewel bearings, and its rotation is sensed by an infrared light beam which adds no friction. Plus, it's both weather and shock resistant. Comes complete with pouch, lanyard and comprehensive instructions and requires 3 x AAA batteries.



Cat Q-1405

**\$199**

### Scale

Knots:  
 Feet per minute:  
 Metres per second:  
 Miles per hour:

### Range Selection

0-87.9  
 0-8790  
 0-44.8  
 0-99.9

## Tests Most Sizes! Battery Tester

Save money and save batteries with this compact and easy to use 13 range battery tester. In an instant you'll know whether a battery is fresh or flat. With an impact resistant case it can take the rough and tumble of just about any tool box and keep on keeping on! As well, it's self powered so never needs batteries.



Cat Q-1002

**\$16<sup>95</sup>**

## Digital pH Meter

This digital pH meter fits neatly in your pocket! Designed for testing the pH level of water systems such as swimming pools, aquariums (fish tanks), rivers and streams or water conditioning plants etc. You simply immerse the tip of the meter in the solution you are testing for a few seconds and it will indicate whether the water has a safe pH level or whether it's acidic or alkaline. The meter produces a pH read-out on a scale of 0-14 with 7 being pure water. If the meter displays a pH of less than 7 it implies that the solution is acidic while a read-out greater than 7 suggests the solution is alkaline. This ingenious device comes complete with case, buffer solution and small screwdriver for calibrating.



**NEW '93**

**\$129**

Cat Q-1403

## Resistance Substitution Wheel

Convenient, easy to use and easy to handle! You can select values from 5 ohms to 1M ohm in 36 steps using the most common divisions. Comes complete with leads and insulated crocodile clips.



Cat Q-1410

**\$22<sup>95</sup>**

## SPARE PARTS

We stock a comprehensive range of replacement parts. For more information ask our staff or ring your nearest service centre.

Sydney (02) 888 3077, Melbourne (03) 429 5817, Brisbane (07) 391 8096, Perth (09) 250 1461, Adelaide (08) 347 1900





## Digital Prototype Design Station

With the Design Station you can quickly and effortlessly build prototypes of your digital designs without the need for soldering..... then test them with the vast array of test and measurement equipment built into this impressive unit. The Design Station is a must for engineers, technicians, students, and hobbyists. Comes with a removable solderless breadboard, wire jumper kit (350 assorted lengths), probes and detailed manual.

- Variable and fixed DC power supply
- Binary Coded Decimal to 7-segment decoder/driver/displays
- DB25 serial data connector
- 2 pushbutton momentary debounce logic switches
- Frequency counter (1Hz to 1MHz)
- Multi-frequency signal generator
- 8 logic switches & Logic probe
- Analogue Multimeter
- Pulse generator
- Fused overload protection

Cat Q-1435

**\$549**

## Continuity & Voltage Tester (Plus Screwdriver)

Every tech needs one of these! Use it to check switches, batteries, bulbs, LEDs and more. Tests AC/DC voltage up to 50V max., has LED indicator and is powered by watch battery cells. Plus, it's a screwdriver complete with pocket clip!

Cat Q-1533

**\$12<sup>95</sup>**



## AC Voltage Finder

Now there's no need to put yourself at risk! This device comes with an insulated tip which detects the electromagnetic field surrounding cables, sensing any AC voltage above 120 volts and warns you with a flashing LED and an audible "buzz". At this low price, there's no excuse for not having one!

Cat Q-1531

**\$16<sup>95</sup>**



## Logic Probe

A great time-saver! No need to tie-up your CRO or multimeter... and you'll be able to check logic states at a glance. Power is obtained from the circuit being tested (5-15V) and High/Low/Pulse states are indicated by individual LEDs.

### Features:

- Adjustable threshold for DTL/TTL or CMOS circuits
- Two modes - Pulse and Memory
- Low circuit loading (approx. 30uA input)
- Maximum input frequency: 12.6MHz

Cat Q-1272

**\$34<sup>95</sup>**



## Component Test Probe

Terrific for testing Surface-Mounted Devices or general components such as resistors, diodes, capacitors etc., this probe lets you apply both contacts with one hand, leaving the other free. Can be used with most digital multimeters and other test equipment with "banana"-type socket inputs.

Cat Q-1932

**\$12<sup>95</sup>**



## 110 - 500V Voltage Tester

Any electrician would find this voltage tester to be a handy friend. It's a pencil style probe for checking voltages in the range of 150, 300, and 500 volts DC or 110, 220, and 380 volts AC. It's a fast way of knowing if a cable is 'live' and also just how 'live' (approximate voltage).

Cat Q-1534

**\$8<sup>95</sup>**



## Auto Cable Checker

This great gadget saves you having to break up looms and strip leads when checking voltages - just place the lead into the checker's piercing slot and push the slide across and a probe will pierce the insulation to give you an accurate reading of the voltage present. Also checks batteries and spark-plug leads!

Cat Q-1537

**\$9<sup>95</sup>**



## Logic Pulse

A very effective and inexpensive tool for inspecting logic circuits. Can be used to inject a signal into logic circuits without removing the IC or breaking the circuit. The short 10us duration of the output pulse (100mA) insures that no damage will be done to the circuit. The output is switchable between 0.5 & 400Hz. It's powered by the circuit under test (5 - 15V DC).

Cat Q-1276

**\$34<sup>95</sup>**



## 6V-12V-24V Voltage Tester

A perfect tool for auto electricians. This pencil style probe checks both AC and DC voltages within the range of 6, 12, or 24 volts. Use it to check for live cables and make sure they are within the voltage range.

Cat Q-1532

**\$8<sup>95</sup>**



## Auto Test Probe - 12/24 Volt

Complete with a screw-on probe-protecting cap and alligator-clip lead, this durable test probe is suitable for automotive use and measures electrical systems of 12V and 24V. An indicator globe lights when voltage is present.

Cat Q-1539

**\$4<sup>95</sup>**



## Logic Probe

A circuit powered (4V - 18V DC) logic probe that's ideal for troubleshooting and analysis of logic circuits. It's switch seletable for TTL or CMOS circuits with adjustable threshold for each. The maximum input signal frequency is 20MHz. With LED indicators for Hi, Lo and Pulse/Memory, and audible Logic indication.

Cat Q-1274

**\$39<sup>95</sup>**



## Box of 20 High-Quality Assorted Coax Cable Assemblies

Set includes:

**BNC plug to:**

BNC plug,  
PL259 plug, BNC socket,  
Mini UHF plug, IC test clips,  
'N' connector plug & TNC plug.

**PL 259 plug to:**

PL259 plug,  
TNC plug,  
Mini UHF plug & 'N'  
connector plug

**'N' connector plug to:**

'N' connector plug,  
Mini UHF socket,  
Mini UHF plug & TNC plug  
Mini UHF plug & TNC plug.

**Mini UHF plug to:**

**TNC plug to:**

TNC plug,  
Mini UHF socket & TNC  
socket.

**\$169**

Cat Q-1936



**Plus  
Cable Rack!**



# 20 Big Years of Experience In Kits !

## Discover The Big, Exciting World Of Electronics With A Kit From Dick Smith Electronics.

We make it as easy as possible for you, with quality components, superior design, clear concise instructions and exceptional value for 20 years. Put it all together and you'll soon see that Dick Smith Electronics kits are the biggest value in the business.

### Here's Why:

We Use Only Brand New Prime-Grade Components. Unlike other kit suppliers who sometimes slip in manufacturer's seconds or sub-standard components, we always give you the best.

### We Guarantee The Quality Of Our Kits.

Every kit carries a Quality Control card, so you know that it has been thoroughly checked before it gets to you.

### We Build Prototypes Of Every Kit.

We test-drive every kit and catch the bugs before you do, so you don't get any nasty surprises. In fact, we find and rectify faults other kit-sellers never pick up.

### Our Instructions Are Better.

We take great care to write instructions in clear, easy to understand

terms. What's more, each kit contains our exclusive 'Guide to Kit Construction' leaflet to end the "where do I start" blues - even for beginners.

### We Make It Safe.

You can see before you buy which kits are mains-powered. Plus, just to be sure, all mains powered kits are supplied with a 'Mains Guide Booklet'. Whatever you do, if you're unsure, leave it to some-one who knows.

### We Have Spare Parts For All Current Kits.

That's right, even the specialised and hard to get parts. If you need a spare part, ask at your nearest store and they'll get it for you - fast!

### We Take The Hard Slog Out Of Building Kits.

Let's face it, most kit builders are handier with a soldering iron than a drill or saw. That's why almost all our kits have pre-drilled holes, pre-cut slots and pre-printed panels.

### We Have Our Own Service Department.

If things don't go quite the way you planned, we can service your kit in our Service Centre. Our rates are very reasonable and, providing your kit was assembled to a satisfactory standard, we'll have it up and running in no time!

### You Can Return It!

Should you think a kit is too difficult, return it to us within seven days with a receipt, and, if you haven't opened any of the inner packs, you'll get a full money-back refund.

### We Take Pride In Our Kit Range.

Our range of kits is not only the largest around, it's the best! In fact, you'll find a kit to suit everyone from the absolute beginner to the highly experienced.

What's more, our range is constantly being upgraded as new kits are released in the magazines.

### Our Kits Are Graded.

All our kits are graded with our Degree Of Simplicity symbol. Follow the simple guide below, and you'll know, even before you start, if the kit is right for your level of expertise.



### Mains WARNING!

Kits marked with this symbol involve 240V AC mains power wiring. Please note that handling, testing and operating mains powered equipment can be dangerous when basic safety rules are not followed. If you're inexperienced or not confident in working with mains powered circuits, we strongly recommend that you DO NOT attempt these kits!

### Degree of simplicity



### Simple

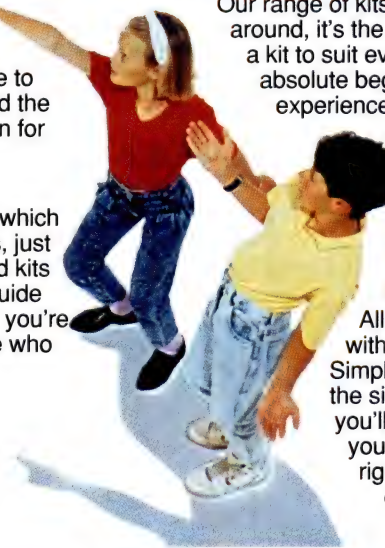
Designed for kit builders with little experience. You'll have to know how to solder, and the basic principles of electronics, but you'll find these kits are quite uncomplicated. If you haven't had any experience at all, then you'll find it a good idea to look into our Funway Into Electronics series first.

### Intermediate

These are slightly more complex kits which require a bit more skill, and a reasonable knowledge of electronics and electricity. If you've put a few circuits together in the past, then you should give these a try.

### Detailed

These are for kit builders who know it all. They involve virtually all aspects of electronics and electricity, so you'll want to consider yourself an accomplished kit builder to attempt them.





Used by schools and colleges throughout Australia!

## Electronics For Beginners

Our best selling electronics course for beginners is used as an introductory textbook in countless schools and colleges throughout the country. Funway 1 assumes you know absolutely nothing about electronics. It shows you what the components look like, how to connect them into the circuit, even how to go on with further experiments with your circuits when they are finished. For complete safety there's no soldering and no dangerous voltages to play with.

\* Photograph illustrates 'The Flasher'.

It's safe for kids!



**The Book**  
Cat B-2600  
**\$4.95**

### Plastic Breadboards

Expand your Funway 1 projects into bigger and better things with **\$4.95** extra plastic breadboards.

Cat H-4050

# VOLUME 1

### Funway One Project Kit 1 - 10

All the components necessary to build any of the first ten projects in Funway 1 series. And because the components are not soldered you can use them over and over again. Remember, all these projects are battery powered so they're safe... even for the youngsters!

Cat K-2600.

**\$4.95**



#### 1. Continuity Indicator

Just like a multimeter - it will show if you have a complete circuit or an open circuit. A light emitting diode (LED) will glow if the circuit is complete.



#### 2. Transistor Tester

As well as telling you if your transistor is okay, it shows you how transistors work.



#### 3. Water Indicator

Are your plants thirsty? This simple circuit will tell you how much water is in the soil.

#### 4. Light/Dark Indicator

Using a light dependent resistor, it will light an LED if light falls on it. This type of detector is used in some alarms.

#### 5. Flasher

Want to add flashing lights to a model train layout? This project will do it for you!

#### 6. Electronic Siren

A mini version of the siren on police cars. Fantastic to add to toys!



#### 7. Dog & Cat Communicator

Dogs and cats can hear sounds that human beings can't hear. With this great Dog & Cat Communicator, you might be able to 'talk with the animals'.

#### 8. Decision Maker

As used by top executives and politicians. Just press the button and it will decide... Yes or No!

#### 9. Morse Code Indicator

Amateur Radio operators send Morse Code all over the world. You can now learn the code too, and send secret messages.



#### 10. Music Maker

Your own electronic organ! Play your own tunes.... Move over Beethoven!



### Funway One Project Kit 11 - 20

Contains the more specialised components required to complete the last ten projects (11-20) in Funway 1. As with the first ten projects, there is no soldering and no dangerous voltages.

Note: You will also need the (1-10) kit above to build these projects.

Cat K-2610 **\$4.95**



#### 11. Sound Effects Generator

Ever wondered how many of those sound effects are made in the movies? Build this and you can make some of your own.



#### 12. Crystal Set

Free Radio - no batteries to buy, nothing to turn off. Listen in to your favourite station.

#### 13. One Transistor Amplifier

Build your own amplifier.... it can be used with the Crystal Set and other projects if you wish!

#### 14. Beer Powered Radio

Yes, it actually runs on beer... or Coke! Listen-in, but don't drink the battery.



#### 15. Two Transistor Amplifier

Even more power - enough to drive a speaker, so you can listen-in without headphones!

#### 16. The Simplest Transmitter In Town.

Allows you to transmit Morse Code across the room.

#### 17. Voice Transmitter

Imagine being able to transmit your voice to a radio set! This project makes it easy.

#### 18. CB Radio Receiver

Listen-in to the truckies and other CB'ers. And you don't have to spend a fortune on a CB.

#### 19. Amateur Radio Receiver

A radio receiver to listen-in to ham operators and other stations in the 2-6MHz bands.

#### 20. Radio Booster Amplifier

A radio frequency amplifier to give other radios even better reception!



**Please Note:** These kits do not include instructions. All information is published in Funway Volume 1, (B-2600), which is necessary before construction can begin on any kit. Cases shown are not included in basic kits.



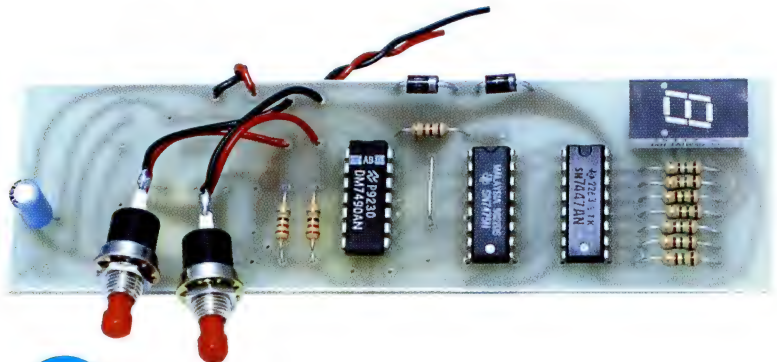


## Funway 2 takes over where Funway 1 leaves off... with 20 new projects to try!

But these projects are different - they're all built the modern way, on printed circuit boards, which means all components are soldered into position. So you'll need a soldering iron. Funway 2 teaches you how to solder, how

to avoid the pitfalls and how to use a multimeter. The projects have been specially chosen to be useful and they're battery operated and very safe. Plus, there are printed labels to make your circuits look really professional.

Book Only  
Cat B-2605  
**\$6.95**



\* Photograph illustrates 'LED Counter Module' (K-2639)

# VOLUME 2

## FUNWAY 2 KITS

There's something here for everyone! Simple, economical and fun! Each kit contains new, guaranteed components.

### 1. Flasher

The latest in electronic jewellery, or a burglar warning light, etc... the choice is yours. Fun and simple!



Cat K-2621 **\$5.95**

### 2. Ding Dong Doorbell

Yes, it actually sounds like an old-fashioned doorbell. But it's electronic.... and you can build it.

Cat K-2622 **\$8.95**

### 3. Morse Code Trainer

You can turn this audible alarm into just about anything requiring sound! Even for Morse Code - Fun to learn!

Cat K-2623 **\$14.95**

### 4. Universal Timer

Are the eggs too hard? Time them with this handy little timer. It really works and you can set it for as little as a few seconds, to about 15 minutes.



Cat K-2624 **\$10.95**

### 5. Electronic Dice

Just as much fun using it, as it is building it. And it really is randomly picked - there's no cheating with these dice!



Cat K-2625 **\$8.95**

### 6. Mini Organ

This great little circuit uses the back of the PCB as the keyboard. Play a tune - it's easy!

Cat K-2626 **\$13.95**

### 7. Pocket Transistor Radio

Building this small set will teach you a lot about the fundamentals of radio. Then you'll have fun using it!

Cat K-2627 **\$13.95**

### 8. Touch Switch

Ever wondered how those lift-buttons work? Build this touch switch and you'll be able to work it out. A variety of functions clearly explained.

Cat K-2628 **\$9.95**



### 9. Mosquito Repellent

Do mozzie repellents really work? Build this and you'll find out how and why... It's based on university research. You won't hear it but the mozzies certainly will.

Cat K-2629 **\$9.95**

### 10. Intercom Amplifier

Use it to make the intercom (Project 18), or as a general purpose amplifier. It's handy and has good sound output too.

Cat K-2630 **\$9.95**

### 11. Wireless Microphone

Just like the 'bugs' used in spy movies! Transmits to any standard FM radio...even in another room or next door.

Cat K-2631 **\$9.95**

### 12. Light Activated Switch

Useful in many security applications around the home. If a light goes on, the switch activates. You can even use it to trigger a burglar alarm.

Cat K-2632 **\$7.95**

### 13. Metal/Pipe Locator

Extremely handy for locating pipes, wires, etc., in the walls before drilling holes. A simple circuit that's surprisingly effective.

Cat K-2633 **\$8.95**



### 14. Sound Activated Switch

The switch is activated by sound. Use it as a telephone bell extender, without breaking Telecom regulations, or for security applications.

Cat K-2634 **\$10.95**

### 15. Home/Car Alarm

Extremely practical... it can be used to protect your home and property. Uses any of the normal alarm triggering devices.

Cat K-2635 **\$10.95**

### 16. Electronic Siren

Just what you need with the alarm above. Also makes a terrific sound effects circuit.

Cat K-2636 **\$9.95**



### 17. LED Level Display

Hook it up to your stereo and it can warn you of dangerous overloads. Looks great as well... the LEDs light up in time to the music.



Cat K-2637 **\$10.95**

### 18. Intercom Unit

Build your own intercom and use it around the home. Practical and simple to build. Try it with the intercom amplifier (Project 10).

Cat K-2638 **\$15.95**

### 19. LED Counter Module

A perfect introduction to integrated circuits. This useful counter can be adapted to a huge variety of counting applications - or build it just for fun!

Cat K-2639 **\$14.95**

### 20. Shortwave Receiver

You'll be able to tune a variety of shortwave stations or (with simple modifications) even emergency services and amateurs, etc!



Cat K-2640 **\$13.95**

### Please Note:

These kits do not include instructions. All information is published in Funway Volume 2, Cat B-2605, which is necessary before construction can begin on any kit. Cases shown are not included in basic kits.



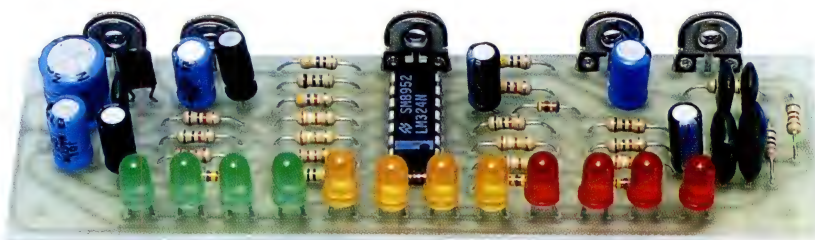
## 100 Pages Of Fun With Funway Volume 3!

Suits the more advanced hobbyist, and those who have completed Volumes 1 & 2, as the projects are all based on integrated circuits. There are ten projects in the book, but many of the projects can be built in a number of forms - so there are virtually as many 'individual' projects

as there are in the other two books! In the back of the book you'll find deluxe project labels printed on specially coated paper..... use these with Zippy Boxes, and your project looks like a million dollars!



Book Only  
Cat B-2610  
**\$6.95**



\* Photograph illustrates 'Mini Colour Organ' (K-2664)

### Funway 3 Kits!

10 more exciting projects with... Funway 3. Each project is fully explained in 'Funway into Electronics, Volume 3'. You can't go wrong, because all the instructions are set out so they're as easy as possible to follow. What's more, there are useful tips on how to make your projects look good and how to fit them into Zippy boxes.... plus, there are special labels supplied in the book to give them that professional finish.



#### 1. Light And Sound

What versatility! It's actually six projects rolled into one. You simply build the kit in the form you want.... an LED flasher, a mini strobe flasher, police siren, motor boat sound effects, continuity tester or Morse Code practice oscillator.

Cat K-2665

**\$13.95**

#### 2. Two-Up



Australia's 'national game' has become electronic. And you don't even have to find any King George pennies. Simulates the throw and the spin to give you the final result. Come in spinner!

Cat K-2661

**\$13.95**

#### 3. Cricket



It's a ton of fun! Hide the Cricket... when the lights go out, it starts chirping, turn the lights on or make a noise and it stops. Makes it so hard to find. You can keep them guessing for hours... as long as they don't kill you first.

Cat K-2663

**\$13.95**

#### 4. Mini Stereo Amp



A great amplifier for your Walkman style stereo or radio? Don't be tied to phones, with this project you can listen in comfort. Or you can build it into a mini PA amplifier.

Cat K-2667

**\$22.95**

#### 5. Minder



'Ok bud, leave the car alone!' That's the Funway 3 minder telling villains that it's looking after the car. It also makes a great 'lights-on' and 'door-open' warning or even a pseudo burglar alarm.

Cat K-2660

**\$9.95**

#### 6. Mini Colour Organ



Your very own Disco colour organ - but this one's battery operated, so it's much safer than mains devices. Connect it to your radio, cassette or stereo for your very own lightshow.

Cat K-2664

**\$15.95**

#### 7. Combination Time Lock Switch



You can make a game or make a real electronic 'lock' with this one. Use it to control an alarm or a door control, etc. Simply set the combination you want, you can change it when you wish.

Cat K-2666.

**\$17.95**

#### 8. Lil Pokey



You'll really have a ball with this one - and you don't risk losing a single cent. A digital project which not only shows how the one-armed bandit works, but it also teaches you how logic circuits operate.

Cat K-2662.

**\$22.95**

#### 9. Binary Bingo



A great school project... it's a fun game, but even more - it demonstrates binary numbers extremely well. Binaries are the basis of all computers. It may seem pretty simple to play... but try it.

Cat K-2668

**\$22.95**

#### 10. Mini Synth



This one's fantastic.... a 'live' musical synthesizer. It's live because it uses you as the note generator! You get an amazing range of control over the sound.

Cat K-2669

**\$24.95**

#### Please Note:

These kits do not include instructions. All information is published in Funway Volume 3, Cat B-2610, which is necessary before construction can begin on any kit. Cases shown are not included in basic kits.

### When You've Finished Funway 3?

You're ready to build just about any of the great range of kits from Dick Smith Electronics. That gives you a huge range to choose from. What's more, you'll also be able to solder

properly, identify all components, read circuit diagrams, even use test equipment.

Who knows?.... You could even be ready for a career in Electronics. And it all starts here, with Funway Into Electronics!



As used in  
schools and  
colleges!

## Funway 1 Gift Box

Cat K-2605

**\$34<sup>95</sup>**



Schools and colleges throughout Australia use Funway 1 as a practical and fun educational aid. With no dangerous voltages or soldering, the Funway 1 Gift Box makes an ideal gift for children or adults. The pack comes with the components, our specially manufactured reusable plastic 'breadboard' and the Funway 1 Book.

### Includes

- 24 Resistors
- 18 Capacitors (including a variable type)
- 2 Transistors
- 1 Integrated circuit
- 2 LEDs
- 1 Light dependent resistor
- 1 Diode
- 1 Potentiometer
- 1 Speaker
- 1 Ferrite rod aerial
- 1 Crystal earphone
- 1 Audio transformer
- 1 Battery clip
- Hook-up wire
- Plastic bread board
- Screws and washers

Note: Batteries, Morse Keys, etc. not included.



## 20 Exciting projects to build Funway 1 Into Electronics Starter Pack

Want to learn about electronics, but haven't a clue where to start? Then the Funway 1 starter pack is for you! It comprises 20 fascinating kits, is completely safe (no soldering required) and assumes no prior knowledge of electronics. Ideal for beginners, students and anyone who's ever wanted to get into electronics.

### Includes

- Funway 1 book
- 2 plastic bread boards
- Side cutters
- Screwdriver
- Morse keyer
- 9V battery
- Potentiometer
- Speaker
- Crystal earphone
- Ferrite rod aerial
- Components

### Kits You Can Build Are

- Flasher
- CB radio receiver
- Music maker
- Sounds effect generator
- Crystal set
- Beer powered radio
- Two transistor amplifier
- Electronic siren... and lots more!

**\$52<sup>95</sup>**

Cat K-2607



## Funway 1, 2 & 3 Gift Box

Even if you know nothing about electronics, The Funway 1, 2 & 3 Gift Box will have you building your own projects in no time! It's by far the most inexpensive way to buy... and contains all three Funway Books, a selection of the most popular & stimulating projects from each, and more. You'll get the chance to build a Flashing Brooch, Wireless Microphone, 'the Cricket' and a Mini Amplifier.

Cat K-2680

**\$79<sup>95</sup>**



## Funway Jumbo Gift Box

We don't call it the Jumbo Gift Pack for nothing! With over 30 projects, 3 fantastic Funway books and a quality soldering iron, it's amazing value (the parts alone are worth more than the kit). All in all, a smart gift for young minds and a stimulating hands-on way to learn electronics.

Cat K-2690

**\$159**



## Funway 2 Jumbo Gift Box

Save a bundle and learn about electronics at the same time! This educational giftbox contains our complete range of all 20 Funway 2 projects plus many more incredible extras. In fact, if you add up the normal retail price of everything in this box, it's worth at least \$300 - that's a sensational saving! You get: a multimeter, soldering iron, morse key, side cutters, Funway Volume 2 book, battery and hundreds of components!

Cat K-2695

**\$199**

### Parents Note

Funway projects are designed to be completely safe for even the youngest constructor. All Funway kits use battery power, so there are no dangerous voltages. However, Funway volumes 2 & 3 involve soldering, which may require supervision if attempted by younger children.



## Funway 3 Bonus Pack

Exceptional value! With the Funway 3 Bonus Pack you get the Cricket project, a Mini Stereo Amplifier and Funway into Electronics Volume 3 book. What's more, compared to buying everything separately, it's great value for money.

Cat K-2670

**\$34<sup>95</sup>**



## Funway 2 Gift Pack

A bargain gift for the budding electronics genius. The Funway 2 Gift Pack is specially designed for value. With everything the beginner needs including Funway 2, book, soldering iron, solder and 9V battery. As well, you get the Wireless Microphone Kit, which also works as a microphone or even a secret 'Bug'.

Cat K-2620

**\$42<sup>95</sup>**



# Pre-Packed Kits



## Solar Education Kit

Harness the sun! A fun and inexpensive way to learn about solar energy. The kit contains a solar cell module, a solar powered motor, wires, plastic turn-tables and an easy to read booklet explaining solar energy.

Cat K-1060 **\$9<sup>95</sup>**



## Electric Kit

More than just a project kit... it's an introduction into the exciting world of electricity. It tells you how electricity is produced, about circuits, voltage, current, resistance, conductors, insulators and more. As well, you can build electric light circuits, puzzles, even a Morse code set. Includes a reusable base, globes, wires, resistors and components.

Cat K-1005 **\$19<sup>95</sup>**



## With motorboat! Electric Motor Kit

Ideal for junior boat designers from 8 years up! They'll have a great time building this electric motor, then installing it into the motorboat. Learn how to build the motor from the ground up, as well as the basic principles of electromagnetism. It's fun, easy and educational. Requires 1 x D cell battery.

Cat K-1010 **\$19<sup>95</sup>**



## Crystal Radio

An educational adventure into the world of crystal radio. Learn about the similarities and differences between crystal and regular radio, how a radio works and how to improve your reception. Best of all, you get to build your own crystal radio and experiment with it! Comes complete with crystal diode, coil tube, wire, connecting wire, base, earphone and more.

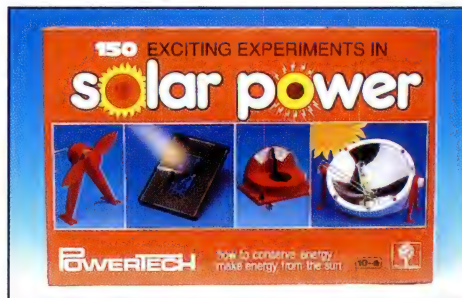
Cat K-1015 **\$19<sup>95</sup>**



## Solar Energy Kit

An exciting educational kit suitable for children 8 years through to adults. It includes all the materials you need to build your own solar energy lab! You can build more than 25 experiments and they're all easy to assemble. Comes complete with solar energy collector, solar heater, energy focusing lens and thermometer.

Cat K-1002 **\$19<sup>95</sup>**



## Solar Power Kit

If you've ever wondered about the vast capabilities of solar power, experiment with this kit. You can learn all about how to conserve energy with these 150 experiments. Everything from a simple solar water heater to more complex electrical experiments using an electric motor can be made with this exciting kit. It comes complete with parabolic, reflector, solar furnace, solar panel, electric motor, diodes, LEDs and more. Includes comprehensive instructions.

Cat K-1022 **\$59<sup>95</sup>**



## Solar-powered Helicopter/ Gramophone Models

Amuse yourself by building a model helicopter or gramophone to explore the unlimited capabilities of solar energy. These solar-powered wooden model kits are safe and easy to build. They include comprehensive instructions, solar-cell module, small DC motor (for the helicopter), musical IC (for the gramophone), hook-up wire and glue. Guaranteed to keep you and the kids entertained for hours.

Cat K-1062 Helicopter  
Cat K-1064 Gramophone **\$19<sup>95</sup> ea**



## Capsela 250 - Explorer Set

Build 20 motorised models and projects like a go-cart, a mini-cycle or an aeroplane as you learn about electricity, energy, gears, chains and drives. Many hours of exciting fun and interest as kids learn how and why things work. Includes 42 interlocking parts and 48 chain links.

Cat K-1204 **\$79<sup>95</sup>**



## Capsela 450 - Inventor Set

Get set for an exciting adventure as you build 30 motorised models and entertaining projects. Explore the concepts of chain drive, friction and traction, speed, torque and motion energy. You can create just about anything you care to imagine, even a slow-motion robot. Includes 85 interlocking parts and 48 chain links.

Cat K-1208 **\$129**



## Capsela 700 Deluxe Set

The spirit of discovery makes building these 56 models and projects a memorable adventure. From simple machines to cranes to boats and tanks including a water pump and vacuum device. You can observe through the clear capsules seventeen science concepts. Includes 90 interlocking parts.

Cat K-1212 **\$159**



## ELECTRIC MOTORS

### Low Speed/Low Torque

Voltage Range: 3-12V  
Nominal Voltage: 3V  
Speed (no load): 3600 RPM  
Current (no load): 0.07A  
Torque @ max efficiency:  
3.07g-cm  
Body Size: 20mm (diam.)  
x 25mm (long)  
Shaft Size: 8.1mm (long)  
x 2mm (diam)

Cat P-9000  
**\$135**

### Medium Speed/ Medium Torque

Voltage Range: 1.5 - 3V  
Nominal Voltage: 3V  
Speed (no load): 13,800 RPM  
Current (no load): 0.35A  
Torque @ max efficiency:  
18.6g-cm  
Body Size: 23.6mm (diam)  
x 28.5mm (long)  
Shaft Size: 6.5mm (long)  
x 2mm (diam)

Cat P-9002  
**\$195**

### High Speed/ High Torque

Voltage Range: 6 - 12V  
Nominal Voltage: 12V  
Speed (no load): 18,400 RPM  
Current (no load): 0.30A  
Torque @ max efficiency:  
69.2g-cm  
Body Size: 27.5mm (diam)  
x 32.6mm (long)  
Shaft Size: 12mm (long) x  
2.3mm (diam)

Cat P-9004  
**\$495**

Great for a wide range of experiments, hobbies, etc. With three, high quality, single shaft models to choose from.



## KITS - GENERAL

### Universal Power Supply

This tiny PCB pattern (just 71 x 52mm) can be used in a variety of ways as either a single or dual supply to obtain many different voltages. +15V, -15V, +/-15V, +18 to 22V, or less than 15V are all possible from this circuit by providing your own transformer and rectifier combinations. Short-form kit with PCB and instructions only.

**\$495**  
Aug '88 Cat K-3435



### Universal Voltage Regulator

Cat K-3592  
**\$695** May '92

Power almost any battery-operated device from a car battery or DC plug pack supply and save batteries! This safe and low-cost kit regulates a +12V(nominal) supply. By changing the resistor value on the PCB you can step-down voltage to 3V, 4.5V, 6V, 9V or other voltages within the range. It delivers up to 1.5A (with heatsinking), has an output voltage range from 1.2-37V and features internal thermal overload and short circuit protection. You can design it for existing equipment or as a stand alone unit. Short-form kit with all components and PCB.



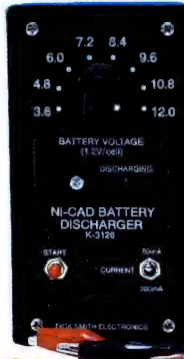
### Mini 1.5V to 9V DC Converter

Here's an easy way to replace those expensive 9 volt batteries with cost-efficient 1.5 volt cells. This easy-to-build kit uses just 3 components and allows any type of 1.5V cell (AA,C,D,N or AAA) to replace a more expensive 9V battery. What's more, the PCB measures just 17 x 43mm and fits neatly inside a 9V battery compartment.

### NiCad Battery Discharger

Get the best performance from your NiCads with this stylish battery discharger. It has switchable voltage (3.6, 4.8, 6.0, 7.2, 8.4, 9.6, 10.8 & 12V) and automatic cut-off. This easy-to-build kit is ideal for most types of NiCads as used in cam-corders, cordless & cellular phones, radio controlled cars, cordless drills and laptop computers. The unit continuously monitors voltage and automatically cuts off the discharge current when the battery as a whole is fully discharged. As well, there's a switchable current discharge of 50mA and 200mA plus a push-to-start button. This full-form kit has all components, hardware, case and a pre-punched (black anodised) screened front panel.

Cat K-3126  
**\$3495** Nov '92



### Low Voltage Battery Cut-Out

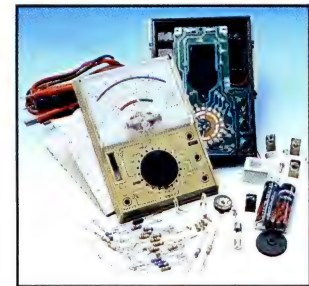
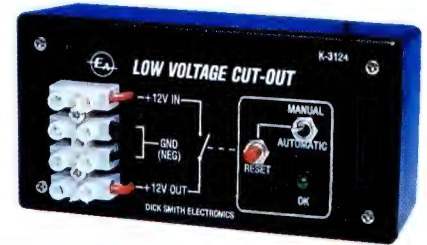
Cat K-3124  
**\$2695** Jan '92

A low voltage cut-out unit that ensures you can't flatten your car or boat battery, by using it to power external accessories. It disconnects the load before there's any chance of 'starting troubles'. The drop-out voltage is adjustable over a nominal range (10.9V to 11.9V) and it can be set to automatically restore power to the load when the battery power returns. Comes as a full-form kit with PCB, all components, case and front panel label.

### Variable Power Supply

Cat K-3200  
**\$4295**

This has got to be one of the handiest kits you could build! A 500mA power supply which is variable from 1.5 to 15 volts. It's overload protected and comes with all components, hardware, case, pre-punched silk screened front panel and plug pack transformer.... so no mains wiring is required. It's ideal for the first time kit builder.



### Bargain Benchtop Power Supply

Cat K-3202  
**\$7995** Aug '91

A practical approach at the design stage has led to a versatile, extremely cost-effective 18V @ 1A (550mA continuous) benchtop power supply. It gives 2.5 to 18V variable output, switchable current limiting (30mA & 1.2A), switchable voltage and current metering in one compact package. Full-form kit supplied with PCB, all components, case and pre-punched, silk screened front panel.



### SLA Battery Charger

Cat K-3204  
**\$129** Aug '92

Charge up your gel cells safely and correctly with this easy-to-construct 'intelligent' battery charger. Incorrect charging usually damages the battery's internal structure, considerably reducing its service life. This unit monitors the battery and automatically maintains a constant 'float voltage'. In fact, you can even attach it permanently to the battery. It charges both 6V and 12V batteries and automatically adjusts the charging rate to suit the battery. Features a 6-way rotary switch for current settings, 3 LEDs which indicate charging modes and a short-circuit-proof safety feature. Complete with deluxe case, PCB, all components, pre-punched silk-screened front panel and metal rear panel, power transformer and current meter.





## Kits - General

Ideal For CB or Amateur Radio!

### 13.8V 5A Power Supply

Cat K-7110

**\$129**

**EA** October '88



The Powermate II is an extremely popular power supply for CB and amateur radio equipment. It delivers a clean, well-regulated 13.8 volts DC and your rig can draw up to 5 amps from it. This has got to be the most cost-effective way to power up your radio gear. Full form kit comes with PCB, all components, attractive plastic case, front panel label and transformer.

### VK Powermaster MK 2

**NEW 93**

Cat K-3400

**\$189**

**EA** January '93



The new and improved Powermaster Mk2 kit gives you all the power you'd ever want for transceiver and bench-top power installations. Its flexible design allows you to choose the appropriate transformer for your desired power output level, opening up many possibilities for customising your own particular installation.

For example:

Current Rating: TRANSFORMER	CONTINUOUS	PEAK (1 MINUTE)	SURGE (PULSE)
M-2000	5A	10A	25A
M-2010	8A	20A	25A
M-2010 (UPGRADED)	15A	20A	25A

For those who remember the original Powermaster, the addition of a 20A panel meter to the kit plus provision for an optional 12V cooling fan will make even higher power configurations possible with perfect safety. On the cosmetic side, the supplied case is now an attractive black powder-coated and silk screened unit - an advance over the previous bare aluminium box. Other improvements include: A front-panel overload protection reset switch and a primary fuse change from fast-acting to slow-blow. The kit includes components, PCB, hardware, panel meter, fan grill and a pre-punched silk-screened chassis to assemble the basic kit.

Optional Equipment:

- Transformers
- Cooling Fan & DC filter components
- Bridge Rectifier Heatsink

Run mains appliances off your car battery!

### 12-230V Inverter

Cat K-3478

**\$289**

**EA** Sept '85



Allows you to run portable TVs, mini-fridges and other appliances off your car battery. This compact 300VA inverter is ideal for building sites and camp sites. Unlike most inverters, it has an auto-start feature which means it uses virtually no power until an appliance is switched on. Comes with a durable plastic case, silk screened, pre-punched front panel, double power point, and all necessary components.

Nom. Supply Volts:	12V DC
Output:	up to 240V (RMS)(Square Wave)
Frequency:	50Hz crystal locked
Maximum Load:	300VA
Current Listing:	30amps (primary)

## Laboratory Power Supply

Cat K-3461

**\$159**

**AEM** August '88



An economical, fully-protected and fully-metered power supply with laboratory-grade specifications. Designed with crowbar and thermal protection circuits, it comes with an attractive case, all components, hardware, front panel, front panel label, meters, and transformer.

Var. Output Voltage:	0 to 30V
Var. Output Current:	range 1- 300mA range 2- 2 Amps
Load Regulation:	0.01% @ 100mA load 40mV from 0-2 Amps
Output Ripple:	1mV p-p @ 500mA load
Output Noise:	approx. 0.6mV RMS 100KHz
Crowbar Protect:	4V min/40V max.

### VK Powermate 25

Cat K-3210

**\$259**

**EA** January '90



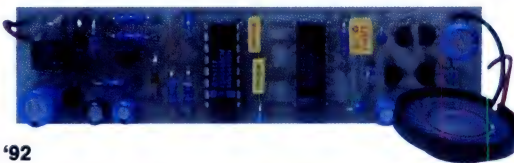
If you've set your sights on a transmitter in the 100 to 150 watt class, then you'll need this to drive it. It features a 25-amp continuous current rating, 35-amp peak capacity, and double protection through foldback current limiting and an over-voltage crowbar circuit. Comes with all components, PCB, hardware, pre-punched front panel, label and circuit breaker. Does not include a case or transformers. Case H-2481 and transformer M-2010 are suitable.

## Diesel Sound Simulator

Cat. K-3030

**\$12<sup>95</sup>**

**EA** December '92



If your model railway looks great, but doesn't sound true-to-life, here's the solution: Our Diesel Sound Simulator Kit is easy to build, fits inside most locomotives (speaker included) and takes its power from the rails. What's more, using some very clever circuitry, the pitch reflects the loco motor's speed - how's that for a realistic simulation! Supplied as a short-form kit with all components, PCB and mini speaker.

## Electronic Doorbell

A quality doorbell system which won't cost you the earth! In fact, it's so good you'll have a hard time convincing friends and family that you actually built it yourself. It's a full form kit and comes complete with a two-tone bell generator, easily replaceable components, doorbell switch, battery holder cable and a stylish deluxe doorbell case.

Cat K-3800

**\$22<sup>95</sup>**

**CHIP** May '92







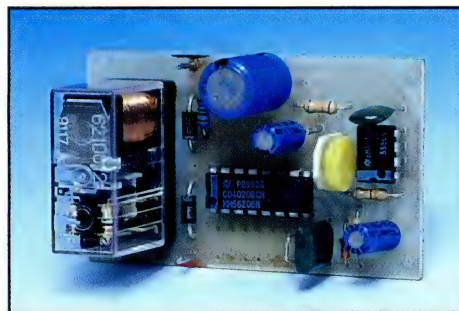
## Microwave Leakage Detector

Microwave ovens are fast.... but are they safe? Microwave leakage is invisible and dangerous, check your oven for dangerous radiation leaks, easily and quickly with this handy meter. Comes with a case, meter, front panel label, and all components. And it doesn't require batteries.

Cat K-3095

ETI July '79

**\$19<sup>95</sup>**



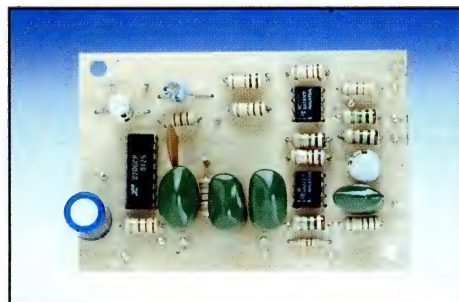
## It's a gem! Flexitimer

This ingenious little device uses just a handful of components and can very accurately time intervals from a few seconds to an entire day. It's incredibly versatile and can be easily adapted to virtually any number of timer applications by simply altering a few component values. This is a short form kit with PCB and components only.

Cat K-3595

EA March '91

**\$18<sup>95</sup>**



## Soundbender

Build a magic box of special effects for your electric guitar or other musical equipment. You can even use it on your voice to create wild robotic characters or a singing Darth Vader. Comes with all components, PCB, pots, switches and knobs. Case and front panel are not supplied.

Cat K-3509

ETI February '82

**\$39<sup>95</sup>**

## Stud Finder



September '88

Exclusive to  
Dick Smith Electronics

With this low cost stud finder your wall doesn't have to end up looking like the target in a shooting gallery. Glide the stud finder over any fibro or gypsum board wall and locate studs and noggins with confidence. Comes complete with case, components, and smart front panel label. It's ideal for handyman and tradespeople.

Cat K-2723

**\$22<sup>95</sup>**



## Voice Synthesizer



SILICON  
CHIP  
August '88

You'll sound like an intergalactic super bad guy... with the Vader Voice Synthesizer. It's a fun kit that's incredibly easy to build and comes with a plastic case, all components, an electret microphone, speaker and front panel label.

Cat K-3510

**\$22<sup>95</sup>**



## Frequency Locked UHF Transmitter Key

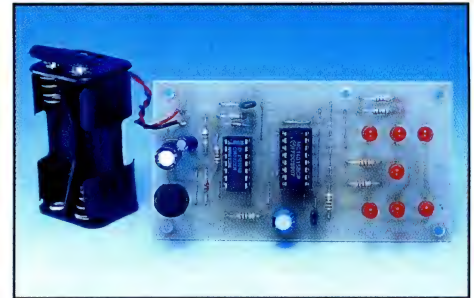
An easy to build UHF transmitter which doesn't need frequency adjustment. It's compatible with our K-3258 remote switch as well as other remote switches. Using a SAW filter it offers several advantages over LC circuits.... it locks the transmitter to the exact frequency, eliminates the need for transmitter alignment and has very little frequency drift. Comes with case, PCB and all components.

Cat K-3259

Exclusive to Dick Smith Electronics

SILICON  
CHIP  
August '90

**\$29<sup>95</sup>**



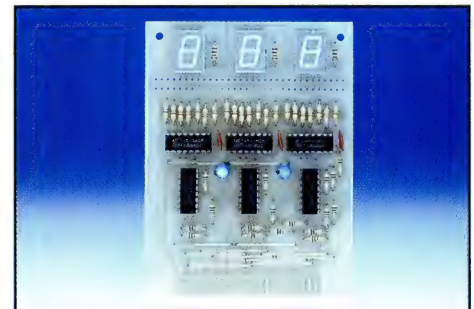
## Electronic Dice

Well, to be strictly correct, it's really an electronic die! This simple circuit uses two CMOS ICs and gives an LED display which is far more realistic than previous circuits. Just like a real die it slows down as the roll comes to an end. What's more, the display matches the face of a real die. It's a short form kit which comes with PCB, all components and battery holder. (Batteries not included)

Cat K-3532

SILICON  
CHIP  
July '90

**\$12<sup>95</sup>**



## 3 Digit Counter

Designed for maximum versatility! You can use it with a minimum of external components or integrate it with a larger project. The LED display section can be removed for chassis mounting and the module operates over a wide voltage range (5-15V). It's a short form kit with PCB, components and LED display.

- Up to 2MHz counting speed
- Clock enable
- Up/down counting

Cat K-3451

**\$29<sup>95</sup>**

Exclusive to Dick Smith Electronics



## Universal UHF Remote Control Switch

It's easy to build and can be used for switching security systems, lights, doors... almost anything! The kit consists of a 304MHz receiver, decoder IC and output relay driver on a single board. It's a full form kit which comes complete with frequency locked transmitter (there's no tuning required on the transmitter kit), all components, PCB, miniature transmitter case and switch case with pre-punched front panel and front panel label.

Extra transmitters available

Cat K-3258

SILICON  
CHIP  
Dec '89

**\$79<sup>95</sup>**

Exclusive to Dick Smith Electronics



# Kits - General, Automotive



## Light Chaser

Dazzle your audience with a professional-looking lightshow! Designed for maximum flexibility and with safety in mind, there are 6 chasing patterns, 8 speeds, an enhanced monitoring display, and the ability to run a total of 2400 watts of lighting from 3 channels. It has most of the features of a professional unit without the need for overly complex controls. Comes as a full-form kit with an attractive plastic case, a pre-punched silk screened front panel, PCB and all components.

Cat K-3161 **EA** November '89 **\$109**

Exclusive to Dick Smith Electronics



## Chromavox

Your lightshow can keep pace with your music with the amazing Chromavox. The clever circuit turns sound into light, in a safe and easy to assemble package. It can accept line input from your amplifier or work independently using its own built-in microphone. You can hang 2400 watts of light from 3 channels and have the intensity controlled by the incoming sound level. It's a full-form kit and comes with a pre-punched silk screened front panel, attractive moulded plastic case, PCB and all components.

Cat K-3162 **EA** February '90 **\$149**

Exclusive to Dick Smith Electronics



## Disco Light

This kit will add a real sparkle to your party with a true disco lightshow..... and it'll leave you free to get down and boogie! The Disco Light drives four lighting channels and can be controlled from your stereo or its own built-in microphone. Features include; four lighting channels (maximum load 2400 watts), forward/reverse/ auto reversing chaser patterns, simultaneous strobe on all channels, alternate light mode, adjustable rate chaser/strobe/ etc and a sensitivity control. Comes with PCB, all components, case and pre-punched, silk screened front panel.

Cat K-3150 **SILICON CHIP** July '88 **\$159**



## Intended for professional use! 4 Channel Light Chaser Dimmer

This superb 4-channel lighting controller is designed to take the rigours of commercial use in theatres, discos and music group applications. It's powered from a 240V AC 15 amp outlet and can control a total lamp load of 3600 watts. The chaser can be operated automatically, or you can flash, fade, etc. each channel manually. It comes with a fully pre-punched black case with silk screened front panel and all components

Cat K-3165 **SILICON CHIP** June '91 **\$279**

## Motor Speed Controller

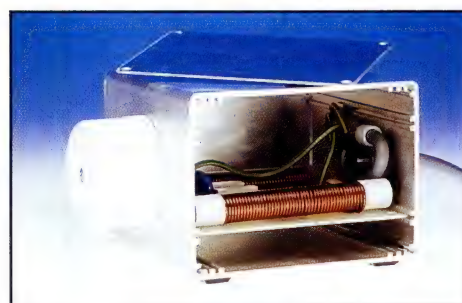
An easy-to-build kit designed to regulate the speed on heavy-duty power tools. It's ideal for circular saws, electric drills, lawn edgers, jig-saws, sanders, grinders and other equipment rated at 5 amps with a 'brush' type motor. This improved design has a higher current rating and uses a Triac rectifier instead of an SCR. It also monitors the back-EMF voltage from the motor so, though the drill speed is controlled, it won't bog down when the going gets tough. Complete with deluxe pre-punched black anodised screened front panel, components, PCB and flush-mounted mains socket.

Cat K-3085 **SILICON CHIP** October '92 **\$46<sup>95</sup>**

## 12/24V DC Light Chaser

An easy to build light chaser with four separate channels, variable chase rate and fuse protection designed to drive 12V light bulbs. Each of the four channels can handle up to 36W with only a modest amount of heatsinking. A single rotary control lets you vary the chase rate from about one flash every two seconds to four flashes per second. Can be powered by a 12V DC plug pack or a 12 or 24V battery. Comes as a full-form kit with all components, hardware and case, plus LEDs for testing the channel outputs.

Cat K-3163 **SILICON CHIP** April '91 **\$29<sup>95</sup>**



## Line Filter/Conditioner

There's nothing more frustrating than your computer rebooting just as you're saving the last 3 hours work, or hearing the click of the washing machine over your favourite music. Protect your valuable hi-fi, TV, and computer equipment from dangerous electric spikes with this easy to build Line Filter/Conditioner. It's a full form kit and comes with PCB, all components and case.

Cat K-3080 **EA** July '88 **\$44<sup>95</sup>**



## Infrared Light Beam Relay

Ideal as a doorminder for the shop or business, or to monitor sensitive areas around the home; eg. swimming pool gate, computer room, etc. This simple project will trigger an alarm for a one second period when someone walks through the beam, so it can be connected to a buzzer or trigger relay depending on the application. It's a full-form kit with all components, PCB, case, front panel label, plug pack..... plus a relay to maximize the applications.

Cat K-3120 **SILICON CHIP** December 1991 **\$49<sup>95</sup>**

## Kits Automotive

### Car LED Voltmeter

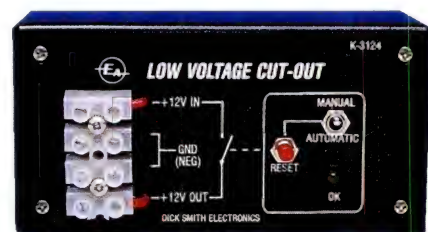
A simple voltmeter that could save you a lot of money in fried batteries, burnt-out ignition etc. It gives a visual indication of your car's 12V battery charging system. The three LEDs show if battery voltage is low, correct or high. This way, you can tell if the voltage is dropping or if your battery is being over-charged. It's super-easy to build, includes a small PCB, status LEDs and all components.

Cat K-4205 **EA** May '92 **\$6<sup>95</sup>**

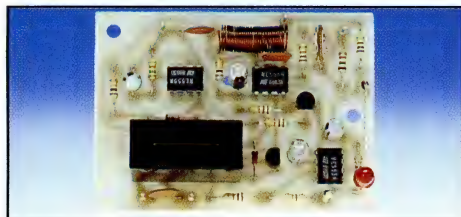
### Low Voltage Battery Cut-Out

A low voltage cut-out unit that offers continuous monitoring of a car/boat battery, etc and disconnects the load before there's a potential for 'starting troubles'. The drop-out voltage is adjustable over a nominal range of 10.9V to 11.9V and it can be set to automatically restore power to the load when the battery power returns. Comes as a full-form kit with PCB, all components, hardware, case and front panel label.

Cat K-3124 **EA** January '92 **\$26<sup>95</sup>**







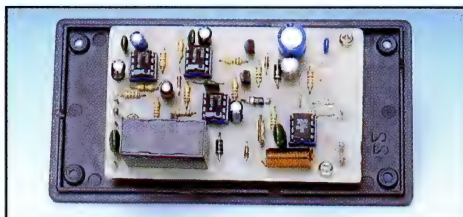
## Budget Car Alarm

This single PCB car alarm senses any voltage drop in your car's electrical system. It's incredibly easy to build and so compact and easy to install that you'll be able to hide it almost anywhere you like. It even features a warning light. Comes with PCB and components only.

Cat K-3250

ETI Project Book

**\$22<sup>95</sup>**



## Easy & Effective Car Alarm Mk.2

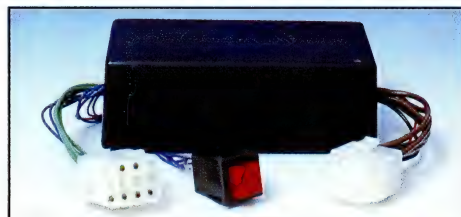
A simple but effective car alarm which features an ingenious voltage sensing trigger circuit, which minimises wiring. Includes both entry and exit delays, flashing warning LED, automatic reset - and best of all, it's easy to build and install. Includes all components, hardware and case. Supplied with IC sockets.

Cat K-4310



October '91

**\$34<sup>95</sup>**



## Versatile Car Alarm

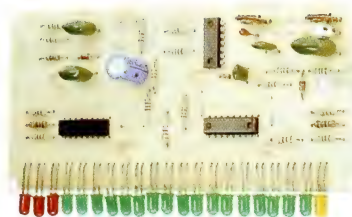
An incredibly versatile car alarm with many outstanding features include Exit/Entry delay, an intelligent warning light, an input circuit which reacts to both rising and falling trigger voltages, N/O & N/C inputs, automatic reset, three outputs, selectable output switching rates and more. With a range of security levels right up to complete immobilisation of the car's electrical system. Comes with PCB, all components, case and connecting plugs and sockets.

Cat K-4300



Feb. '91

**\$49<sup>95</sup>**



## LED Tacho

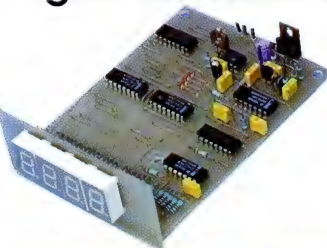
Why spend a fortune buying a tachometer when you can build your own and save! This kit will display engine RPM on an easy to read row of LEDs. Suits vehicles with conventional style ignition systems only. Short form kit comes with PCB and all components.

Cat K-3240

ETI August '80

**\$29<sup>95</sup>**

## Suitable for 4,6 & 8 cylinder cars! Digital Tachometer



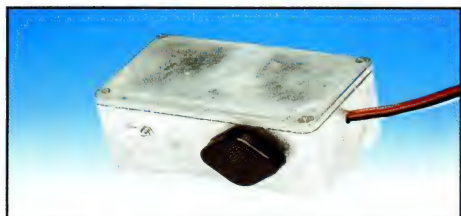
Watching the rev count on your car is a sure way to maximize efficiency and engine life. This low cost digital tacho is certainly the way to go. It's relatively easy to build and designed to work with all ignition systems on 4, 6, & 8 cylinder motors. Short form kit comes with LED display, all components and PCB.

Cat K-3241



Aug. '91

**\$32<sup>95</sup>**



## High Energy Ignition

Tune-up hassles can be a thing of the past! If you own an older style car with a Kettering ignition system (that's points and rotor buttons and stuff) you can save money on tune-ups and achieve a real increase in efficiency and performance with this High Energy Ignition Systems. Add to this, better starting on cold days when the ignition system is wet and you've got a winner. Comes with PCB, all components and case.

Cat K-3302



May '88

**\$49<sup>95</sup>**



## Ignition Killer

There's nothing more frustrating than a car that won't start and that means "forget it" for car thieves....they need to be in your car and away in under 30 seconds and they won't be if you've installed this ingenious circuit. Comes with PCB, all components and mounting case.

Cat K-3255



February '84

**\$32<sup>95</sup>**



## Flashing Deterrent Light

Car thieves think twice when they see this red flashing light. Professional in appearance it's bright enough to be seen during the day. Because it's activated by the ignition you never have to worry about switching it on/off. Designed to withstand voltage extremes and the high temperatures of a car dashboard. Includes all components, mounting hardware, deluxe bezel case and bulb.

Cat K-4200



November '91

**\$9<sup>95</sup>**

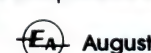
## Test Gear



## Capacitance Meter Adaptor

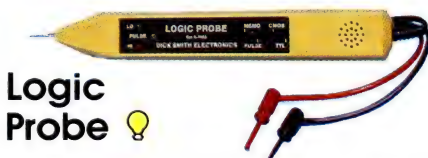
This superb little unit turns your digital or analogue multimeter into a direct-reading capacitance meter. It costs next to nothing and uses only a handful of parts. Extremely easy to get going and plugs directly into the banana plug sockets on your meter. Comes with PCB & components only.

Cat K-3410.



August '88

**\$18<sup>95</sup>**



## Logic Probe

An invaluable tool for tracking down faults in digital systems, and much less expensive than CROs, etc. Gives a reliable indication of logic 'high' & 'low' levels on both TTL and CMOS circuits, with supply voltages between 5 & 15V, and has a choice of either 'stretching' or 'latching' for detecting short pulses. Comes with all components, case, front panel label and lead with clips.

Cat K-7405



August '90

**\$29<sup>95</sup>**



## Logic Pulser

A hand-held logic node stimulator used for injecting controlled pulses into digital logic circuits. Suitable for TTL and CMOS circuits (5-15V). Pulse amplitude depends on supply voltage which is also the supply voltage of the pulser (ie. It's powered by the circuit under test). Pulse width depends on the load being pulsed. Comes with case, all components, power leads with clips, and front panel label.

Cat K-7408



May '91

**\$29<sup>95</sup>**





## 4-Digit Capacitance Meter

Suitable for workshop, laboratory, etc. It's ideal for identifying capacitors where the markings are difficult to follow or for selecting matched values. Seven ranges are available allowing measurements from 1pF to 9999uF. Also has over-range indicator and null control for pF range. Comes with all components, PCB's, case and pre-punched silk screened front panel.

Cat K-7500

**\$109**



May '90



## VHF/UHF Spectrum Analyser

Here's a simple, yet inexpensive instrument with all the circuitry and controls you need to convert almost any standard oscilloscope or 'CRO' into a sensitive and easy-to-use spectrum analyser. It covers the three major segments of the VHF/UHF spectrum: 50-105MHz, 138-225MHz and 470-870MHz. What's more, you can even use it as a wideband FM monitoring receiver. A full-form kit complete with deluxe case, pre-punched screened front panel, all componentry and hardware is supplied.

Cat K-7620

**\$199**



Sep '92



## 50MHz Frequency Counter

Low in cost, yet giving high accuracy, this low-cost 50MHz frequency counter gives you just about every measurement you need in this category - for far less money than comparable commercially available counters. Comes complete with all components, PCB, hardware, LED display, case, plug pack & a pre-punched silk screened front panel.

Cat K-7337



Feb '93

**\$119**

## Transistor Tester

A superb universal signal test meter, with a current rating of 250uA, that's suitable for testing bipolar transistors, diodes, F.E.T.s, S.C.R.s and P.U.T.s. This all new version also has a battery test and error check circuit to help eliminate pointer slamming. Ideal for the beginner and serviceman alike... or even for use in schools. Comes with a meter, case, silk screened pre-punched front panel and all components. Requires 9V battery.

Cat K-7220

**\$39.95**



Dec '90



## 3.5 Digit Panel Meter

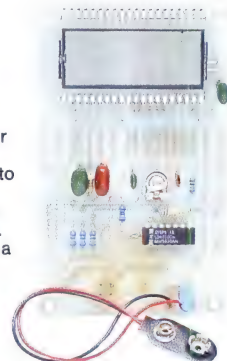
An easy-to-build kit which is perfect for monitoring voltages including anything from power supplies to car batteries. This general purpose panel meter can be built to read voltage up to +/- 200V DC or current up to 2A (or both with suitable switching). It's ideal for the hobbyist, student and any application where you need to monitor voltage or current accurately and precisely. Complete with LCD screen, all components, PCB and a 9V battery snap. (Requires 9V battery)

Cat K-7502



Sep '92

**\$39.95**

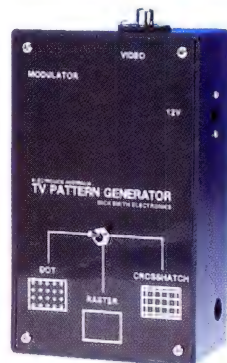


## Ideal for servicemen! TV Pattern Generator

An indispensable aid for the serviceman or hobbyist.... it's small enough to carry around. There are only seven IC's yet you get three patterns: dot, crosshatch & blank raster. Includes VHF modulator. Operates from a 12V DC plug pack (not included). Comes with all components, PCB, case and front panel label.

Cat K-3472.

**\$39.95**



**\$39.95**



Nov '83



## TV Field Strength Meter

Technicians, antenna installers... in fact, anyone dealing with TV/FM antenna service, installation or adjustment; you'll find this kit an invaluable aid. Allows you to locate the best antenna position and can even be used to convert a video monitor into a TV set. It's battery operated (requires S-3315 12V Gel Cell battery), has a built-in charging circuit and can also be operated via an external DC 9V-14V supply. Comes with case, all components, PCB and silk screened, pre-punched front panel.

Cat K-6329

**\$219**

**\$219**



Aug '88



## Colour TV Pattern Generator

An essential tool for anyone working on TV's. Though the circuit is complex, the Colour TV Pattern Generator is surprisingly easy to build as most parts are mounted on a single PC board. Produces seven patterns: Checkerboard, crosshatch, dot, greyscale, white raster, red raster and colour bars. With it you can set your TV's convergence and purity for the best possible picture. Comes with PCB, all components case and pre-punched, silk screened front panel, and plug pack.

Cat K-7355



Nov/Dec '91

**\$119**



## Magnetic Field Strength Meter

The effects of 50Hz magnetic radiation are still a matter of debate. This magnetic field strength meter provides an easy, low cost and accurate way to measure the magnetic fields produced by household appliances, etc, so steps can be taken to minimize your exposure. The liquid crystal display indicates magnetic field strength in micro Teslas or milli Teslas (uT or mT) over the ranges 2uT, 200uT & 20mT. It also includes a battery condition tester. Comes with PCB, all components, case and pre-punched, silk screened front panel. Requires a 9V battery.

Cat K-7600



Oct '91

**\$89.95**



## Multi-Purpose Preamp

Tired of designing an appropriate preamp PCB for every project you tackle? A multi-purpose preamp is the best solution! This dual op-amp circuit board can be configured in any of the 6 designs shown in the manual (supplied). The kit contains a PCB, 3 common components, and schematics for 6 useful preamp designs.

Cat K-5010

**\$9<sup>95</sup>**

EA Nov '88



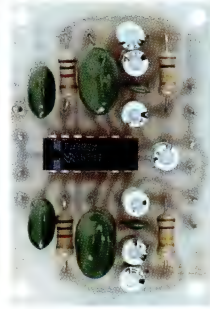
## Stereo Preamp

This miniaturized preamp is ideal as a magnetic cartridge preamp, tape preamp, or auxiliary preamp. It has 40, 55, or 80dB gain and a frequency response well above 20kHz. It's a breeze to build...only one IC is used, and it will run off any power supply from 10 to 40V DC. Comes with PCB and components only.

Cat K-3427

**\$16<sup>95</sup>**

ETI Jul '76



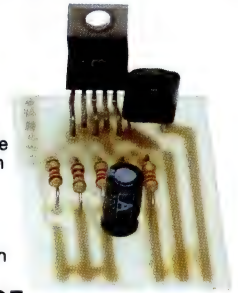
## 30W Power Amp Module

It's unbelievably small and even a beginner will find it easy to build. There are just 8 components on a tiny PCB. One IC (LM1875) is at the heart of this circuit, yet it delivers superb hi-fi performance. Comes with PCB and components only.

Cat K-5002

**\$18<sup>95</sup>**

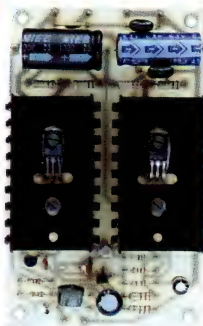
AEM Nov '88



## 20W Module

This size amp is commonly found in TVs, tape recorders, organs, synthesizers, etc. It uses discrete transistors for greater reliability and it's ideal for the novice looking for an understanding of how an audio amp works. Comes with PCB and components only.

**\$22<sup>95</sup>**



Supply voltages: 35V, 30V, 20V  
Power output: 19W, 12W, 6.6W (into 4ohms)  
Input Impedance: 100K approx.

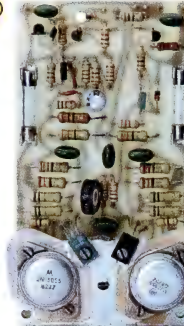
Cat K-3445

EA Nov '84

## 50W Module

Perfect for band use, as a PA, or you can build a pair of them for your own stereo. Yes, the performance is good! The entire amplifier fits on one board and comes with a bracket for bolting onto a main heatsink. Heatsink not included. Comes with PCB and components.

**\$29<sup>95</sup>**



Supply voltage: 40-0-40V  
Power output: 50W into 8ohms  
Response: 5Hz to 50kHz (+0, -3dB)  
Noise: -100dB  
Sensitivity: 0.5V

Cat K-3440

ETI Dec '76

## 100W Module

You can use two of these for stereo, to give you a massive 200W output. The amp fits on one PCB and includes all components, PCB and heatsink bracket. Does not include heatsink.

**\$36<sup>95</sup>**



Supply voltage: 40-0-40V  
Power output: 100W onto 4ohms  
Response: 5Hz to 50kHz (+0, -3dB)  
Noise: -100dB  
Sensitivity: 1V

Cat K-3442

ETI Dec '76



## Audio Sweeper

Here's a useful kit for audiophiles, sound experts, enthusiasts and anyone interested in sound. This very affordable audio test system analyses the performance (treble, mid and bass) of speakers, speaker enclosure filter circuits and room acoustics. It consists of a sweeping audio test signal generator and a metering amplifier which measures the results. Comes complete with a deluxe pre-punched front panel, plastic instrument case, PCB, hardware (including dB meter), components, mic. insert and plug pack.

Cat K-7352

**\$109**

EA Sep '92



## 4 Channel Mixer Preamp

A fantastic 4 channel mixer that takes advantage of the very low noise, low cost op-amps which are now available. It has separate bass, midrange, treble, input and output level controls. The very low noise and distortion figures of this unit make it ideal for guitars, keyboards, tape decks, etc. Short form kit comes with PCB, components and hardware.

Cat K-5400

**\$44<sup>95</sup>**

Jan '92



## Sine/Square Wave Oscillator

A high-performance, yet inexpensive benchtop audio oscillator. It covers the frequency range from around 6Hz to 70kHz in four ranges with very low distortion. What's more, in terms of practical and general use, this oscillator really delivers. It comes as a full form kit with all components, PCB, case and pre-punched silk-screened front panel.

Cat K-7340

EA Mar '92

**\$59<sup>95</sup>**



## Pulse Generator Kit

A sensational pulse generator kit which costs far less than comparable models. Ideal for evaluating wideband amplifiers and filters, adjusting frequency compensation in scope probes and working with digital circuits. With a frequency range of 1Hz to 1MHz, single-shot, adjustable delay on the main output. What's more, it has variable output pulses from 1V to 10V, a choice of either positive or negative output polarity, selectable AC/DC coupling and it's mains powered. A full form kit with all components, hardware, pre-punched screened front panel and a deluxe case.

Cat K-7342

EA May '92

**\$89<sup>95</sup>**



## Playmaster 30/30W Stereo Amp

Excellent performance and specifications. This 30/30W stereo amp is a classic piece of equipment that will do most music systems proud. Construction is made easy by mounting all components (including heatsinks) on one PCB. Full form kit comes with all components, PCB, all hardware, pre-punched rack-mount case and pre-punched silk screened front panel.

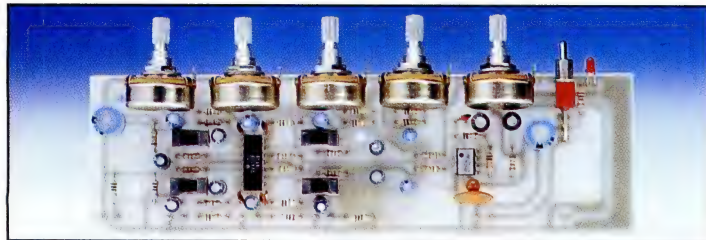
Cat K-5600

EA Apr '92

**\$269**







## Mini Mixer

A low cost, four input 'mini mixer' that you can whip up in no time. Great for home or amateur use. It can be built as a stand alone device or mounted inside your present amplifier. The mini mixer is incredibly versatile and it has a wide range of input and power supply options available. Supplied with PCB and components only.

AEM June '88

Cat K-3039

**\$39<sup>95</sup>**

## LED VU Meter

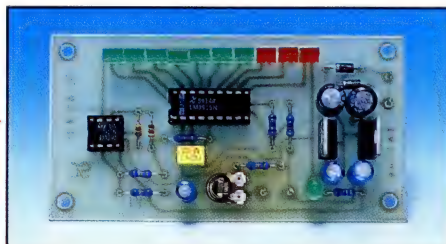
Cat K-5370

**\$24<sup>95</sup>**

**EXCLUSIVE**



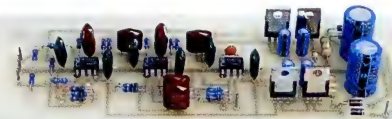
Feb '93



Designing your own audio system or just updating older-style equipment that uses an analogue V/U meter? This unit offers the advantage of fast response and peak hold display. Comes with PCB, red, yellow and green LEDs plus all necessary components and hardware.

## Active Crossover For Two-way Speaker Systems

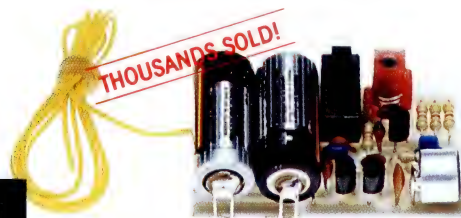
With features usually only found in speaker systems costing thousands of dollars, this crossover improves the performance of your system by over coming the limitations of passive systems. By preceding the power amplifier, this active crossover kit gives ideal high-impedance loads, less discrepancies in speaker driver efficiency and less resistance between the voice coil and amplifier. Comes as a short-form kit with PCB and all components.



EA April '92

**\$34<sup>95</sup>**

## MINI FM TRANSMITTERS



## FM Wireless Microphone

Even a novice can build this miniature FM radio mic yet it has incredibly stable and sensitive circuitry ..... and you can fit it inside a matchbox. Use it to monitor baby, a distant telephone, or as a one way intercom. Signals are transmitted at around 90MHz, which makes it easy to pick up on any FM receiver. Comes with PCB, components and even the batteries.

Cat K-5006

**\$19<sup>95</sup>**



November '89



## FM Stereo Transmitter

A miniature FM stereo transmitter you can connect to your hi-fi and listen to your favourite music in complete privacy, from anywhere in the house, on your Walkman or any FM headset radio. Comes complete with case, components, front panel label and has great specs. Requires 1 AA battery.

Quiescent Current: 3mA  
Harmonic Distortion: 3% @ 200mV input  
Stereo Separation: 45dB at 107.9MHz  
Frequency Range: 88.1 to 107.9MHz  
Operating Voltage: 1.5V

Cat K-5004

October '88

**\$36<sup>95</sup>**



## Guitar Practice Amp Module

Ideal for practicing your favourite riffs at home. This low cost amp pumps out 4 watts into 4 ohms with a 12V supply (nominal). You can mount it in any box to suit your needs. Kit consists of PCB, components, heatsink and front panel label.

AEM August '88

Cat K-3548

**\$29<sup>95</sup>**

## Suits 50W & 100W amp modules Power Supply

This power supply will run either two 50 watt modules (K-3440) or one 100 watt module (K-3442). It includes speaker de-thump circuitry and +/-15 volt supply rail which can be used to power a pre-amp. Supplied with PCB and all components except transformer. Our M-0144 (28-0-28V @ 2A) is suitable.

ETI December '79

Cat K-3438

**\$29<sup>95</sup>**

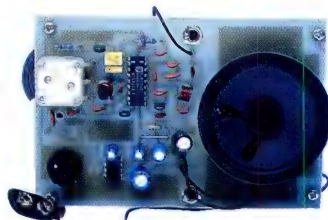
## FM Radio

If you're new to kit building, try this as an ideal first project! This simple FM radio receives all of your favourite FM stations, uses only two low cost Integrated Circuits (ICs) and runs off a 9V battery. It's a great 'hands-on' way to learn about Radio Frequency (RF) circuits and Audio Frequency (AF) amplifiers. This short-form kit comes with FM radio IC & audio IC, PCB, speaker, components and hardware.

\*Battery not included.

**\$29<sup>95</sup>**

Cat K-5014



Nov '92



## Mini Stereo Amplifier

Sick of your personal stereo's limitations? This inexpensive kit can give you the flexibility of a home hi-fi on your desk! It uses your personal stereo as the 'brains' of the operation and uses a tiny 8-pin DIL device which contains two amplifiers and is capable of delivering 1 watt into 8 ohms at 9 volts. Supply voltage can range from 1.8V to 12V. Comes complete with all components, PCB, hardware, front panel label and case.

Cat K-5008

**\$22<sup>95</sup>**



Oct '92





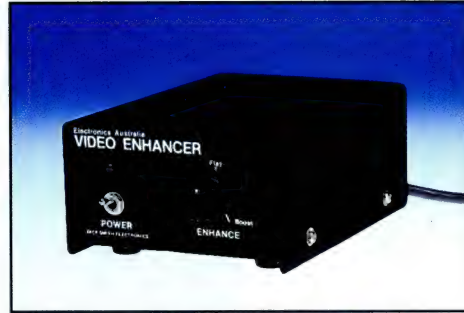
## Stereo Simulator

Ever wished those 'old favourite' video movies had modern stereo sound? This brilliant, low-cost device lets you do just that. It turns almost any mono signal into synthetic stereo sound... and the results are nothing short of amazing. Comes with AC power adaptor, case, front panel label and all components.

Cat K-3421

**\$39<sup>95</sup>**

**EA** April '83



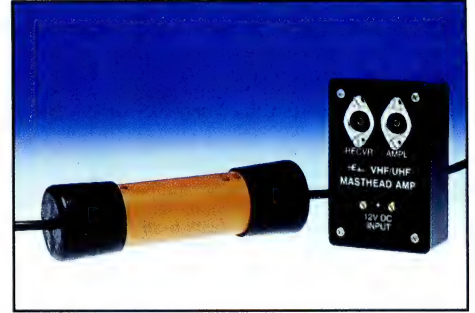
## Video Enhancer

When you're making copies of tapes (yes, the ones you shot yourself) you can lose detail. To make sure you get the best possible quality when dubbing, use the Video Enhancer. Super simple to use.... all control is via just one knob and, unlike most enhancers, you can cut as well as boost. It's ideal where the image is harsh. 240 volt operated, complete with case, front panel label and all components.

Cat K-3463

**EA** October '83

**\$49<sup>95</sup>**



## UHF/VHF Masthead Amp

Having trouble getting a good picture on your TV or FM receiver? This UHF/VHF masthead amp may be just what you need. A masthead amp cuts the losses associated with long cable runs, etc., or where there's more than one set on the same antenna. It amplifies the signal right at the antenna source thereby maximizing signal strength. Comes complete with case & all components. Requires M-9626 plug pack.

Cat K-5800

**EA** October '88

**\$49<sup>95</sup>**



## A Star is Born!

### Budget Karaoke

Sing like a star! It's easy-to-build and doesn't require special Karaoke tapes or CD's. By using the principles employed by recording studios, it allows you to replace the vocals on any of your favourite tapes or CD's with your own. Includes 'gain' and 'null' controls for sensitivity and signal balance. Comes in full form with PCB, all components, hardware and pre-punched silk screen front panel.

Cat K-5300

**\$39<sup>95</sup>**

**EA** November '91



## TV Transmitter For Video Recorders

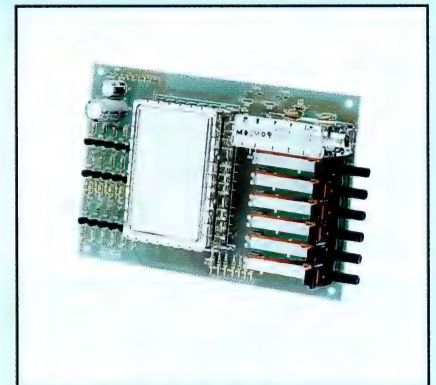
Just the thing when you've got a second TV in the bedroom, etc! Allows you to play a video on your VCR and watch it on a second TV without messy leads or splitters. Unlike some of our competitors kits, ours is supplied with all components for both UHF & VHF modulator output. It's quite simple to build and comes as a full form kit with PCB, all components and front panel label. You'll have to construct your own antennas (instructions supplied) so we've included these PCB's as well.

Cat K-5700



December '91

**\$119**



## Teletext Mk11 Tuner Module

Even if you don't have a VCR you can still have Teletext! Simply add the Teletext Tuner to your Teletext Kit (K-6360). It can tune to both VHF & UHF channels and easily fits inside the Teletext Mk11 case! Enables up to 6 stations to be pre-tuned and selected from the IR controller.

Cat K-6361.

**EA** August '89

**\$139**



## With infrared remote control!

### Teletext Decoder Mk11

The inexpensive way to get all the advantages of Teletext! You can have access to up-to-date news, weather, sport details, TAB information, banking, stock market, theatre information and much more! There's even subtitles for those with impaired hearing (not all programs). It's a full form kit which includes infrared remote control and comes with case, silk-screened pre-punched front panel, all components and mains transformer. It simply plugs into your VCR. Add the Teletext Tuner Module (K-6361) and you can have teletext even if you don't have a VCR.

Great value!

Cat K-6360

**\$319**

**EA** June/July '89





## Alarm Phone Dialler

An alarm sounding in a deserted neighbourhood will do little to summon help, so imagine a device that can call you direct when something goes wrong! Program a contact number into the Alarm Phone Dialler then, if your alarm is triggered, it will ring that number and emit a tone. Phone home while you're on holidays... the Phone Dialler will let you know if your alarm has sounded.

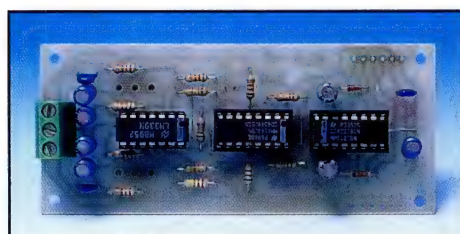
- Includes pushbutton telephone
- PCB, all components & 240V plug pack
- Case with pre-punched front panel and labels
- Suits most alarm systems (with 5-25V output)
- Battery back-up capability (Battery not included)
- Features test & reset buttons plus a trip LED

Cat K-8300

 Sept '89

**\$79<sup>95</sup>**

Note: Not authorised for connection to the Public Telecommunications Network.



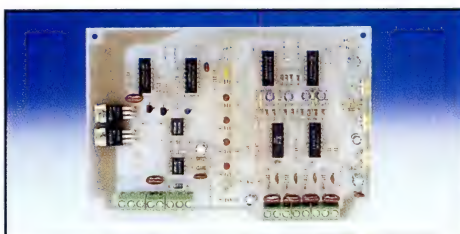
## 2 Sector Module

To expand your K-8401 Burglar Alarm Control Unit, add as many of these Modules as you need! They hold two sectors, each with LED status indicators and isolating switches. Kit includes components, PCB, and IC sockets.

Cat K-8400

**\$14<sup>95</sup>**

 June '90



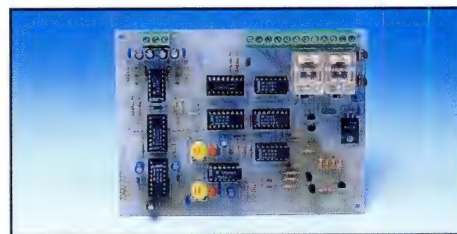
## 4 Sector Home Alarm

With 4 sectors, this one board can control your complete home or office alarm system. It features separately adjustable entry and exit delays and LED entry status display. Kit includes PCB and components. Requires a 12V DC @ 500mA supply.

Cat K-3254

**\$42<sup>95</sup>**

ETI May '85

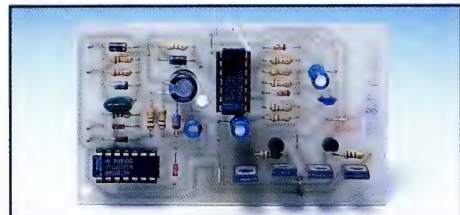


## 2 Sector Alarm Control Unit

This Control Unit is designed to be easily customized with additions such as sector modules (K-8400), power supply (K-8402), and keypad lock (K-8403). The unit itself features variable entry and exit delays, LED status indicators, alarm driver circuitry, timed and latched outputs and two sector inputs. Kit includes all components, PCB, and IC sockets.

Cat K-8401

 June '90 **\$42<sup>95</sup>**

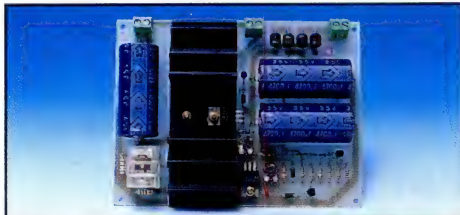


## Alarm Siren Module

Some car and home alarms can be disabled simply by cutting the power off... but not when this battery-powered alarm siren is fitted! It monitors the 12V supply voltage for fluctuations. If the external supply is cut, or varies above or below certain levels, the siren is triggered emitting a piercing 120dB scream. Kit includes PCB and components only.

Cat K-8250

 Oct. '90 **\$13<sup>95</sup>**



## Alarm Power Supply

Provides a regulated 12 volt supply for your alarm, recharges your back-up battery and automatically switches the supply between battery and mains should there be a power interruption. Use it to power your K-8401 alarm or most other commercial systems. Includes PCB and components only. M-1991 transformer recommended.

Cat K-8402

 Sept. '90 **\$39<sup>95</sup>**

## Combination Lock

This keypad combination lock can be used to operate your K-8401 and many other burglar alarms. Works with solenoid door locks as well. It can even be set to trigger the alarm if it detects repeatedly incorrect entries. The kit includes all components, PCB, and high quality keypad.

Cat K-8403

**\$34<sup>95</sup>**

 July '90



## Service and Spares

Every product we sell comes with the full backing and after-sales support of our qualified Service Department. Should something go wrong with your purchase, getting it fixed is easy! With over 70 stores across Australia, there's always a store close-by where you can drop your purchase in for repair or service. As well, we also stock spare parts for just about everything we sell, simply visit your nearest store or pick up the phone. More good reasons, why you can depend on Dick Smith Electronics!

### Service Phone Numbers

NSW (02) 888 3077  
VIC (03) 429 5817  
QLD (07) 391 8096

WA (09) 250 1461  
SA (08) 349 4762  
Spare Parts (02) 888 3077

**DICK SMITH**  
**ELECTRONICS**  
**PHONE & MAIL ORDERS**

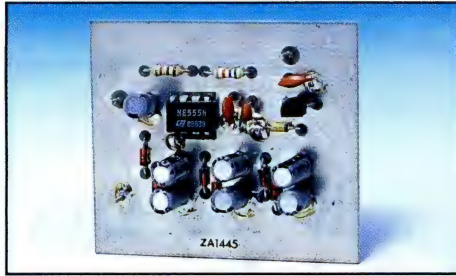
Phone Order line only

Outside Sydney: (008) 22 6610 FREE CALL  
Sydney: (02) 888 2105

Fax (02) 805 1986

Mail Orders: Dick Smith Electronics  
Reply Paid 160,  
Box 321 North Ryde NSW 2113





## 12V/30V DC-DC Converter ⚡

It's an easy to build low power converter which produces 30V from a car battery (12V) supply. It was designed primarily so the FM transmitter (K-6010) could be operated from a car but has many other potential uses as well. The power output depends on the supply voltage.... with an 11V supply the unit can deliver 13mA, 28mA at 12V and 43mA at 13V. Comes as short form kit with PCB and all components

Cat K-6011



February 1990

**\$9<sup>95</sup>**

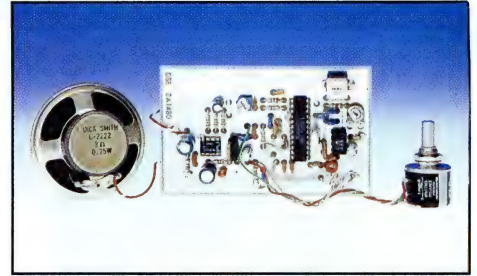


## Shortwave Antenna Kit ⚡

All too often, people spend a lot of money on a good receiver only to have their antenna let them down. Get the very best from your equipment with this high-quality shortwave antenna kit. Comes ready-to-assemble with long wire antenna, polyrope and egg insulators (we obviously wouldn't want your breakfast to get cold). It doesn't need soldering and a full set of instructions are included.

Cat K-3490

**\$32<sup>95</sup>**



## VHF FM Monitor Receiver ⚡

This amazing little receiver can be constructed in just a few hours and gives superb performance. It's a dual conversion receiver which uses the Motorola MC3362 integrated circuit. It has low-power drain, excellent sensitivity and very good image rejection in narrow band voice and data link applications. Short form kit supplied with PCB and all components.

Cat K-6000



March '89

**\$64<sup>95</sup>**



Communications  
'on & between' bikes!

## Radio Intercom For Motor Bikes ⚡⚡⚡

With two of these you can communicate between passenger and rider, or between bikes. It even doubles as an FM radio receiver. The transmitter and receiver are housed in a small case which fits in the pocket, while the speaker and voice activated microphone are fitted into the helmet. Comes with all components, including PCB, mic, speaker, pre-punched silk screened front panel and case. Requires 3 AA batteries.

Cat K-6020



November '89

**\$89<sup>95</sup>**



## Speech Processor For Transceivers ⚡⚡

A highly successful and inexpensive method for controlling the dynamic range of speech through your transceiver. It simply connects in-line with your existing microphone and acts as a preamp, compressor and speech filter so your speech level at the other end is as clear as possible. What's more, it automatically generates a 'beep' each time the PTT button is released, to signal the end of your 'over'. A full form kit supplied with PCB, all components, die-cast case and front panel label.

Cat K-6002



Sept. '91

**\$39<sup>95</sup>**



## Antenna Tuner & RF Preamp ⚡⚡

Improve the performance and give your old shortwave receiver a new lease on life, with this easy to build kit! It provides an antenna tuner with RF pre-amp and preselector, or tuned filter stage, to provide further help to the receivers front end in rejecting unwanted 'rubbish'. The unit is powered by an external 12V DC power source (requires plug-pack). A full form kit, it comes with PCB, all components, hardware and pre-punched, silk screened front panel, and pre-punched rear panel.

Cat K-6100



Nov '91

**\$109**



## 1 Watt FM Transmitter ⚡⚡ For the 2m band

A great project for the newcomer wanting to have a look at amateur radio. This Solid State NBFM Transmitter module produces over 1 watt at 144MHz. Construction has been made easy by using standard components wherever possible. Testing the audio amplifier and crystal oscillator board (once it has been set up) is quite simple. Comes as a short form kit with PCB and all the components.

Cat K-6010



November '89

**\$59<sup>95</sup>**

Outstanding performance!

## 2m FM Transceiver ⚡⚡⚡

An impressive, high performance FM transceiver, designed by our R&D team, that's suitable for either mobile or base station use. The performance and features are nothing less than astounding. Features includes full PLL frequency synthesis, 24 memory channels with repeater shifts, selectable output (25W or 5W), tuning steps of either 5kHz or 25kHz, protection against excessive SWR, and microcontroller for ease of operation. Comes with case, pre-punched silk screen front panel, PCB and all components.

Frequency Range: 144-148MHz  
Channel Steps: 5 or 25kHz  
Repeater Shift: +/-600kHz  
Memory Channels: 24 frequencies with repeater shifts  
Voltage Supply: 13.8V DC. Negative Earth  
Supply Current: 0.5A (receive) 6A (transmit)  
Antenna Impedance: 50 ohms (unbalanced)  
Frequency Accuracy: +/-20ppm

### Receiver

Type: Double conversion superhet  
Intermediate Freq: 10.7MHz & 455kHz  
Sensitivity: better than 0.25uV for 12dB SINAD (0.15uV typical)  
Selectivity: 12kHz (-6dB) 30kHz (-60dB)  
Image Rejection: better than 60dB  
Audio Output: 1W/8 ohms for 5% THD

### Transmitter

RF Power Output: 25W/5W  
Spurious Emissions: 60dB below carrier  
Modulation Method: FM - variable reactance  
Deviation: +/-5kHz

Cat K-6400

**\$399**



Jan/Feb/Mar/April '91

Note: Recommended microphones are our Yaesu D-2110 or D-2105



# Solar Cells

**Want Solar Power For Your Boat, Caravan or Weekender? We Make It Easy!**



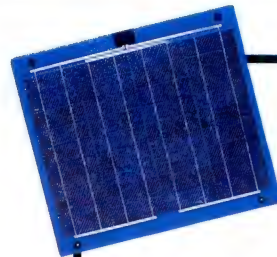
## Boating/Camping Package

Need to keep your boat's battery topped up when you're not using it? Run the bilge pumps and occasional lighting without draining your battery? Planning on camping out and want to run lighting or a radio/TV? Then this is the package for you. It consists of 1 x 18W panel (Cat O-1020) and an SR8-12 regulator (Cat O-1100). All you need add is a 12V battery (the one from your car or boat will do nicely) and you're ready to start taking advantage of free power from the sun!

Average daily load up to 60W-hours.

\* 12V battery not included

**\$359<sup>95</sup>\***



## Why Buy Solarex From Dick Smith Electronics?

Solarex are world leaders in commercial photovoltaic installations. They produce the highest quality solar panels for commercial, military and domestic applications world-wide. In fact, they were responsible for the development of the multi-crystal cell which is the most used and most efficient commercially produced cell today. All Solarex panels are built with the highest regard for dependability and durability, even in the harshest environments.

Add to this our wide knowledge of Solar applications and you can be sure that, with the help of our friendly staff (backed up by the expertise of our technical section), you'll soon be taking advantage of free, non-polluting power from the sun.

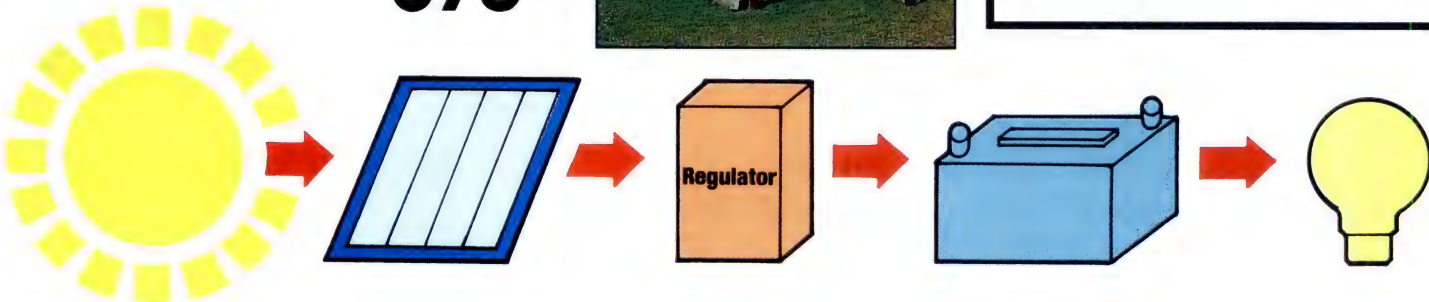
## Caravan/Weekender Package

There's no reason why you should have to do without the comforts of home when on holiday. That's why this package is a boon to caravan/weekender/boat owners and campers. For example, it'll comfortably run a 60W TV for two hours a night or a 20W fluorescent light for four hours a night. It consists of 1 x 60W panel (Cat O-1060) and an SR8-12 regulator (Cat O-1100). Just add a 12V car or boat battery to complete your solar power installation.

Average daily load up to 200W-hours.

\* 12V battery not included

**\$678<sup>95</sup>\***



## MSX SERIES MODULES

Framed with sturdy anodized extruded aluminium providing strength, durability and ease of mounting. The panels are exceptionally well-constructed and have dual-voltage capability whereby the cells are electrically configured as two series strings. The strings may be placed in series or parallel providing 6V or 12V

### SA-5 Amorphous Silicon Module

An encapsulated module designed primarily for use in systems with a 12 volt battery. Protected by an impact-resistant polycarbonate frame and strong impact-resistant solar grade glass, its typical applications include: Electric fences, infrared sensors, maintaining the charge on marine and vehicle batteries, powering 12V DC devices and more.

Size: 306 x 346 x 21mm  
Peak Watts: 5 watts  
Current @ Nom.: 0.33A  
Voltage: 0.33A  
Volts (open circuit): 23V  
Amp Hrs/week: 13.86  
Watt Hrs/week: 194.04  
Cat O-1005  
5-year limited warranty **\$127**

### MSX-10

Size: 420 x 269 x 23mm  
Peak Watts: 10 watts  
Current @ Nom.: 0.59A  
Voltage: 0.59A  
Volts (open circuit): 21V  
Amp Hrs/week: 24.78  
Watt Hrs/week: 346.92  
Cat O-1011  
5-year limited warranty **\$172<sup>95</sup>**

### MSX-18S Slimline Framed

Size: 418 x 498 x 23mm  
Peak Watts: 18.5 watts  
Current @ Nom.: 1.13A  
Voltage: 1.13A  
Volts (open circuit): 21V  
Amp Hrs/week: 47.46  
Watt Hrs/week: 664.44  
Cat O-1020  
5-year limited warranty **\$280**

### MSX-40 Framed

Size: 764 x 502 x 54mm  
Peak Watts: 40 watts  
Current @ Nom.: 2.51A  
Voltage: 2.51A  
Volts (open circuit): 21.1V  
Amp Hrs/week: 105.4  
Watt Hrs/week: 1475.9  
Cat O-1040  
10 year limited warranty **\$399**

### MSX-60 Framed

Size: 1109 x 502 x 54mm  
Peak Watts: 60 watts  
Current @ Nom.: 3.76A  
Voltage: 3.76A  
Volts (open circuit): 21.1V  
Amp Hrs/week: 157.9  
Watt Hrs/week: 2210.9  
Cat O-1060  
10-year limited warranty **\$599**

### Voltage Regulator SR8-12

A high quality regulator designed especially for use with Solarex solar panels. It will maintain batteries in a high state of charge and also afford adequate protection against overcharging. Rated 12 volts @ 8 amps.  
Cat O-1100 **\$79<sup>95</sup>**

\* Amp Hour ratings are based on a daily average insolation of 600mW hr/cm<sup>2</sup>. Amp hours/week and Watt hours/week based on 42hrs peak sun. Specifications all at 25°C.

## Need 240V?

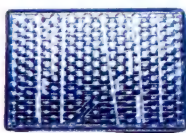
See page 54 for Inverters.

## Solar Modules And Chargers For Low-Power Applications

### Solar Modules

These can be used individually or interconnected for increased voltage (series) or current (parallel).

0.45V 400mA O-2000 **\$3.50**  
0.45V 1A O-2001 **\$6.95**



### Solar NiCad Charger 2 x AA

Cat O-2002

**\$7<sup>95</sup>**



### Solar NiCad Charger 4 x AA

Cat O-2003

**\$14<sup>95</sup>**



### Solar Panel and Charger - 3/6/9V Output

Comes with multi-adaptor two-metre cord, alligator clips, 2.5mm, 2.1mm & 1.3mm female plugs, 3.5mm, 2.5mm male plugs. Supplies 3V or 4V at 100mA, 6V or 9V at 50mA  
Cat O-2004 **\$24<sup>95</sup>**





## Replacement Speaker Drivers:

Here's value! An economy range of Woofers, Midranges and tweeters from Magnavox. They're ideal replacements for use in a wide variety of enclosures and installations - just the thing if the cat's been sharpening its claws on the old ones! They're all 8-ohm impedance and they'll revitalise your old system for much less than you probably thought possible!

### 130mm Midrange

Power Handling: 100 watts max.  
(1.8 - 6.3kHz)  
Impedance: 8 ohms  
Frequency Range: 700 - 8000Hz  
Voice Coil Diam: 20mm  
Magnet Weight: 81g  
Sensitivity: 93dB

Cat C-2060 **\$17<sup>95</sup>**

### 200mm Magnavox

Power Handling: 55 watts max.  
Frequency Range: fmin - 3500Hz  
Resonant Frequency: 45Hz  
Voice Coil Diam: 25mm  
Magnet Weight: 190g  
Sensitivity: 88dB/w/m

Cat C-2054 **\$34<sup>95</sup>**

### 250mm Magnavox

Power Handling: 65 watts max.  
Frequency Range: fmin - 5500Hz  
Resonant Frequency: 35Hz  
Voice Coil Diam: 25mm  
Magnet Weight: 190g  
Sensitivity: 89dB/w/m

Cat C-2052 **\$39<sup>95</sup>**

### 300mm Magnavox

Power Handling: 80 watts max.  
Frequency Range: fmin - 6000Hz  
Resonant Frequency: 26Hz  
Voice Coil Diam: 25mm  
Magnet Weight: 350g  
Sensitivity: 89dB/w/m

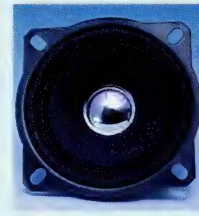
Cat C-2050 **\$49<sup>95</sup>**



### 100mm Midrange

Power handling: 80 watts max.  
(1.8 - 8kHz)  
Impedance: 8 ohms  
Frequency Range: 650 - 11000Hz  
Magnet Weight: 48g  
Sensitivity: 91dB/w/m

Cat C-2062 **\$15<sup>95</sup>**



### 65mm Tweeter

A bargain price for a 65mm tweeter that's suitable for a wide range of applications.

Power Handling: 80 watts max.  
(>4.6kHz)  
Impedance: 8 ohms  
Resonant Frequency: 1700Hz  
Frequency Range: 1.3 - 18kHz  
Sensitivity: 91 dB  
Magnet Weight: 48g

Cat C-2070 **\$9<sup>95</sup>**

## Special Purpose:

### 200mm Twin Cone

Power Handling: 55 watts max.  
Resonant Frequency: 37Hz  
Voice Coil: 25mm  
Frequency Range: fmin - 12kHz  
Sensitivity: 89dB/w/m  
Magnet Weight: 190g

Cat C-2082 **\$39<sup>95</sup>**

### With 100V Line Transformer! 200mm (8") Twin-Cone

Its 100V line transformer means you can chain a number of these together, making them perfect for "Back-ground music" installations.  
Power Handling:  
Transformer Tapped for:  
0.33W/0.66W/1.25W/ 2.5W/ 5W  
Resonant Frequency: 73Hz  
Frequency Range: f min-15kHz  
Sensitivity: 89dB/w/m  
Magnet Weight: 110g

**\$34<sup>95</sup>**

### 100mm (4") Magnavox Twin-Cone

Suitable for bass reflex enclosures of 4 to 20 litres internal volume or ceiling-mount installations.  
Power Handling: 20 watts max.  
Resonant Frequency: 110Hz  
Frequency Range: f min -18kHz  
Sensitivity: 87dB/w/m  
Vas: 1.85 litres  
Qts: 0.7  
Magnet Weight: 152g

Cat C-2064 **\$19<sup>95</sup>**

### 25mm Magnavox Dome Tweeter

With its mylar dome, frequency dispersion plug and High-temperature voice coil, this tweeter offers Hi-Fi quality at a very affordable price.  
Power Handling: 80 watts max.  
Impedance: 8 Ohms  
Resonant Frequency: 3900Hz  
Frequency Range: 2.7- 20kHz  
Sensitivity: 93dB/w/m  
Magnet Weight: 48g

Cat C-2084 **\$14<sup>95</sup>**

### 165mm Magnavox (6") Twin-Cone

A lot of speaker for this price, it's ideal for Column-type PA installations or as a basic general-purpose full-range speaker.  
Power Handling: 55 watts max.  
Impedance: 8 Ohms  
Resonant Frequency: 55Hz  
Frequency Range: f min-15kHz  
Sensitivity: 90dB/w/m  
Vas: 19 litres  
Qts: 0.43  
Magnet Weight: 350g

Cat C-2065 **\$24<sup>95</sup>**

### 135mm Midrange

Perfect as the midrange in a three-speaker hi-fi array, this closed-back design features a polypropylene cone with polyurethane surround.  
Power Handling: 100 watts max. (1.7 - 6.8kHz)  
Impedance: 8 Ohms  
Resonant Frequency: 590Hz  
Frequency Range: 470 - 8500Hz  
Sensitivity: 87dB/w/m  
Magnet Weight: 81g

Cat C-2086 **\$24<sup>95</sup>**

## Hi-Fi Range

### 100mm Bass Driver

Power Handling: 20 watts (max)  
Frequency Range: 60 - 12,000Hz  
Vas: 4.5 litres  
Magnet Weight: 280g  
Resonant Frequency: 70Hz  
Sensitivity: 95dB +/-3dB  
Qts: 0.38

Cat C-2066 **\$29<sup>95</sup>**



## MOTOROLA

A series of special-purpose sound reinforcement speakers and horns from the famous Motorola company. These are very "bullet-proof" units, yet they offer very low distortion, high sensitivity and excellent transient response.



### KSN 1141 Horn Speaker

Frequency Response: 1.8 kHz - 30 kHz  
Average Sensitivity: 92dB @ 1m/2.83v  
Maximum Power Handling: 400 W  
Cat C-2200 **\$39<sup>95</sup>**

### KSN 1142 1.8kHz Driver

Frequency Response: 1.8kHz - 30kHz  
Average Sensitivity: 92dB @ 1m/2.83v  
Maximum Power Handling: 400 W  
Requires KSN 1151 Horn (C-2202).  
Cat C-2201 **\$42<sup>95</sup>**



### KSN 1086 800Hz Horn Driver

Frequency Response: 800Hz - 20kHz  
Average Sensitivity: 93dB @ 1m/2.83V  
Maximum Power Handling: 50W (EIA RS426 (8 Ohm reference))  
Cat C-2207 **\$99<sup>95</sup>**

### KSN 1151 Horn Driver

To suit KSN 1142 (C-2201) & KSN 1086 (C-2207) Drivers.  
Cat C-2202 **\$59<sup>95</sup>**



### KSN 1165 Bullet-Tweeter

Frequency Response: 1.8kHz to 30kHz  
Average Sensitivity: 93dB SPL @ 1m/2.83V  
Maximum Power Handling: 400 watts  
Cat C-2203 **\$39<sup>95</sup>**

### KSN 1177 Twin-tweeter

Frequency response: 3.5kHz to 20 kHz  
Average Sensitivity: 99dB SPL @ 1m 2.83v  
Maximum Power Handling: 100 watts  
Cat C-2204 **\$39<sup>95</sup>**

### KSN 1005 Superhorn

Frequency Response: 4kHz to 27kHz  
Average Sensitivity: 94 dB @ 1m 2.83v  
Maximum Power Handling: 75W (EIA RS426) (8 system reference)  
Cat C-2205 **\$24<sup>95</sup>**

### KSN 1038 Horn-Tweeter

Frequency Response: 4kHz to 27kHz  
Average Sensitivity: 90 dB @ 1m 2.83v  
Maximum Power Handling: 75W (EIA RS426) (8 System reference)  
Cat C-2206 **\$24<sup>95</sup>**



NOTE: "Power Handling" is maximum recommended amplifier music power rating.



## Audiophile Quality Loudspeaker Kits

We don't sell these speakers fully assembled, so this is the only way you can get them. But we can tell you that you'd be hard pressed to find ready-made speakers this good for under \$800! The kit's famous Peerless brand speaker's superior performance and craftsmanship in design and manufacture have been recognised by true Audiophiles and professionals throughout the world for nearly 70 years. The speaker kit consists of:

### HARDWARE KIT:

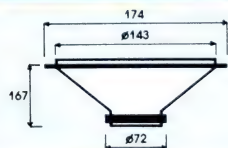
Polypropylene cone speakers with soft foam surround and high-temperature voice coil.  
2 x 25mm Dome tweeters Cat C-2101  
2 x 174mm Woofers Cat C-2106  
Crossovers: 2 x 2500Hz 2-way, Speaker filling, tapered port, badges, glue, plus all necessary screws and fasteners.  
Cat A-2456

**\$269**

### FLAT-PACK CABINET KIT:

2 x black woodgrain 2-way cabinets, 420mmH x 215mmW x 235mmD, grille frames and cloth. Easy to assemble, no tools required.  
Cat A-2457

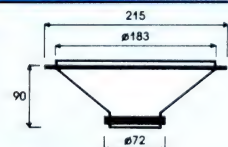
**\$129<sup>95</sup>**



### 174mm (6.5") Woofer

**Specifications:**  
Impedance: 8ohms  
Frequency Range: 48-3500Hz  
Resonance Frequency: 48Hz  
Sensitivity (1w/1m): 88dB  
Power-handling (RMS): 60 watts  
Total Q Factor: 0.55  
VAS: 22 litres  
Magnet weight: 235g  
Suggested Enclosure: 8-20 litres

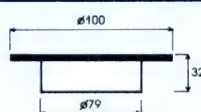
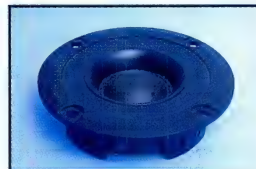
Cat C-2106 **\$79<sup>95</sup>**



### 216mm (8") Woofer

**Specifications:**  
Impedance: 8 ohms  
Frequency Range: 32-3000Hz  
Resonance Frequency: 32Hz  
Sensitivity (1w/1m): 89.5dB  
Power-handling (RMS): 80 watts  
Total Q Factor: 0.44  
VAS: 83litres  
Magnet weight: 235g  
Suggested Enclosure: 15-40 litres

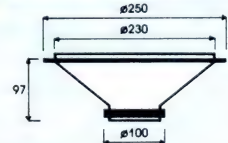
Cat C-2108 **\$89<sup>95</sup>**



### Ultra High Performance 25mm (1") Dome Tweeter

**Specifications:**  
Impedance: 8 ohms  
Frequency Range: 62-3640Hz  
Resonance Frequency: 1400Hz  
Sensitivity: 92 dB  
Power-Handling (RMS): 130 watts\*  
Magnet weight: 0.24kg

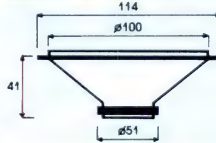
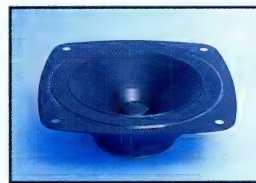
\* If used with 4000Hz, 12dB/octave crossover. Cat C-2102 **\$59<sup>95</sup>**



### 250mm (10") Woofer

**Specifications:**  
Impedance: 8ohms  
Frequency Response: 33-3000Hz  
Resonance Frequency: 33Hz  
Sensitivity (1w/1m): 91dB  
Power-handling (RMS): 90 watts  
Total Q Factor: 0.44  
VAS: 125 litres  
Magnet Weight: 430g  
Suggested Enclosures: 30-70 litres

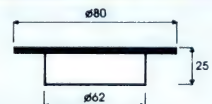
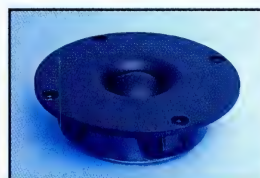
Cat C-2110 **\$119<sup>95</sup>**



### 100mm (4") Mid-Range

**Specifications:**  
Impedance: 8 ohms  
Frequency Range: 1000-9000Hz  
Resonance Frequency: 900Hz  
Sensitivity (1w/1m): 90dB  
Power Handling (RMS): 60 watts  
Total Q Factor: 1.3  
Magnet Weight: 100g

Cat C-2104 **\$69<sup>95</sup>**

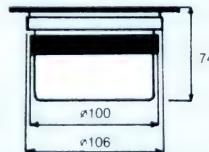
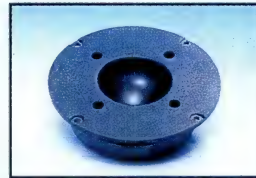


### 25mm (1") Dome Tweeter

**Specifications:**  
Impedance: 8ohms  
Frequency Range: 2200-20,000Hz  
Resonance Frequency: 1080Hz  
Sensitivity (1w/1m): 89dB  
Power-Handling (RMS): 100 watts\*  
Magnet weight: 100g

Cat C-2101 **\$49<sup>95</sup>**

\* If used with 4000Hz, 12dB/octave crossover.



### 51mm (2") Mid-Range

**Specifications:**  
Impedance: 8 ohms  
Resonance Frequency: 29.8Hz  
Sensitivity (1w/1m): 89.0 dB  
Power-Handling (RMS): 107/105 (dB watts)  
Total Q Factor: 0.65  
Magnet Weight: 0.47 (kg)

Cat C-2111 **\$149<sup>95</sup>**



## Quality Hi-Fi Speakers

When you start hearing unwanted snap, crackle and hiss in your favourite songs, then it's time for a new set of speakers. Our stunning range of high-quality hi-fi speakers are inexpensive and appropriate for 2-way or 3-way speaker systems. They're perfect for when you decide to replace or up-grade your speakers, or as an affordable way to build that high-quality speaker system you've always dreamt of. With polypropylene cones and foam suspension for a super-smooth response across the frequency range.



### 300mm (12") Woofer

#### Nominal Specifications

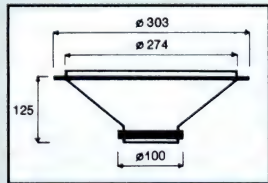
Frequency Response:	25 - 5000Hz
Nominal Diameter:	300mm
Piston Diameter:	250mm
Baffle Opening:	277mm
Nominal Impedance (Znom):	8 ohms
DC Resistance (Rdc):	6.2 ohms
Resonant Frequency (fs):	25Hz
Total Q (Qts):	0.55
Equivalent Compliance (Vas):	260litres
Sensitivity @ 1W @ 1M S:	90dB SPL
Max Power	80W

#### Suggested Enclosures

Sealed Volume Vb:	50 - 75litres
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**\$79<sup>95</sup>**

Cat C-2040



### 250mm (10") Woofer

#### Nominal Specifications

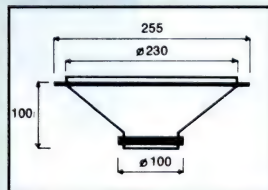
Frequency Response:	40 - 5000 Hz
Nominal Diameter:	250mm
Piston Diameter:	210mm
Baffle Opening:	233mm
Nominal Impedance (Znom):	8ohms
DC Resistance (Rdc):	6.1ohms
Resonant Frequency (fs):	30Hz
Total Q (Qts):	0.45
Equivalent Compliance (Vas):	115litres
Sensitivity @ 1W @ 1M S:	90dB SPL
Max Power	80W

#### Suggested Enclosures

Sealed Volume Vb:	50litres
Vented Volume Vb:	40litres
Tuning fb:	26Hz

**\$69<sup>95</sup>**

Cat C-2041



### 200mm (8") Woofer

#### Nominal Specifications

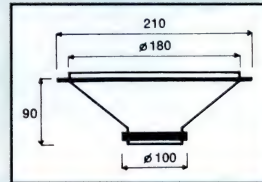
Frequency Response:	40 - 8000Hz
Nominal Diameter:	200mm
Piston Diameter:	163mm
Baffle Opening:	184mm
Nominal Impedance (Znom):	8ohms
DC Resistance (Rdc):	6.1ohms
Resonant Frequency (fs):	45Hz
Total Q (Qts):	0.52
Equivalent Compliance (Vas):	25litres
Sensitivity @ 1W @ 1M S:	88dB SPL
Max Power	60W

#### Suggested Enclosures

Sealed Volume Vb:	17litres
Vented Volume Vb:	>30litres
Tuning fb:	35Hz

**\$49<sup>95</sup>**

Cat C-2034



### 162mm (6 1/2") Woofer

#### Nominal Specifications

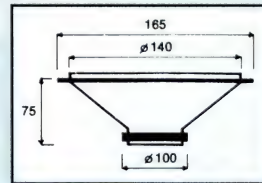
Frequency Response:	55 - 6000Hz
Nominal Diameter:	162mm
Piston Diameter:	128mm
Baffle Opening:	142mm
Nominal Impedance (Znom):	8ohms
DC Resistance (Rdc):	6ohms
Resonant Frequency (fs):	60Hz
Total Q (Qts):	0.87
Equivalent Compliance (Vas):	16litres
Sensitivity @ 1W @ 1M S:	87dB SPL
Max Power	60W

#### Suggested Enclosures

Sealed Volume Vb:	10 - 15litres
Vented Volume Vb:	N/A
Tuningfb:	N/A

**\$39<sup>95</sup>**

Cat C-2042

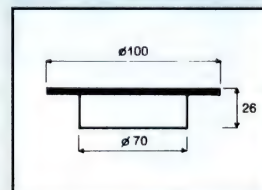


### 25mm (1") Dome Tweeter

Frequency Response:	2kHz-20kHz
Coil Impedance:	8 ohms
Sensitivity:	100dB/W + /-3dB @ 1W 0.5m
Magnet Weight:	152g

**\$24<sup>95</sup>**

Cat C-2044



## Don't know what to give?

We have that perfect gift for you!

Gift vouchers are available in \$10, \$20 & \$50 denominations, and they're redeemable at any Dick Smith Electronics store throughout Australia.

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Fax: (02) 805 1986

Mail Orders: Dick Smith Electronics  
Reply Paid 160,  
Box 321 North Ryde NSW 2113



# Speaker Accessories

## Economy Grille

Cat C-2646

**\$4<sup>95</sup>**

A high-impact resistant 200mm (8") plastic grille for mounting speakers in walls and ceilings.



## Hi-Power L-Pad

Ideal for high-powered speakers or PA systems. Can be mounted on a remote panel, or directly into your speaker enclosure.



Cat C-7204

**\$9<sup>95</sup>**

## Speaker Grill Cloth

Cat C-2095

**\$15<sup>95</sup>**



Are your speaker enclosures looking a little shabby? This quality speaker grill cloth is easy to fit and can have those old boxes looking like new. In pack 1m x 1.5m.

## 2-Way Crossover

Just perfect if you're building yourself a new speaker system. These have quite respectable crossover characteristics, the frequency is approximately 3kHz, and the impedance is 8 ohms.

Cat C-2512

**\$19<sup>95</sup>**



## 3-Way Crossover

A great crossover for three-way systems. Use it for new speaker systems or as a replacement in your old boxes. It's a 2-inductor network with non-polarised capacitors giving frequencies of 1.5kHz and 5kHz.

Cat C-2513

**\$24<sup>95</sup>**



## Horn Speaker

Ideal for boating, this is a water-proof horn speaker at an incredibly low price! An exclusive Dick Smith Electronics product, this speaker's impedance is 8 ohms and it has 10-watt capacity.

Cat C-2705

**\$15<sup>95</sup>**



## 15 Watt Horn Speaker

It's weather-proof! A quality 125 x 165mm aluminium horn speaker that comes complete with metal mounting bracket and is suitable for all outdoor or indoor PA systems. The speaker impedance is 8ohms and the frequency response 350Hz to 5,000Hz. Maximum power handling is 15 watts RMS.

Cat C-2706

**\$39<sup>95</sup>**



## Piezo Ceramic Tweeter

This amazing little tweeter handles up to 40 watts continuous. Its frequency response is from 5kHz to 27kHz and it can be used with or without a crossover in any 8 ohm system.

Cat C-2005

**\$24<sup>95</sup>**



## 57mm Mini Speaker

This 57mm speaker gives surprising performance. Suitable for any 8-ohm system, it's just the thing for small radios and a wide range of kits.

Cat C-2222

**\$4<sup>95</sup>**



## Speaker Box Lining

Quality innerbond - light, clean and easy to handle. It's the recommended density for most speakers, weighs approximately 300g/m2 and is 25mm thick and 700mm wide. Comes in metre packs.

Cat C-2090

**\$6<sup>95</sup>**



## Rain Checks

On the rare occasion that your nearest Dick Smith Electronics store has run out of a current \*advertised line, simply ask for a Rain Check! As soon as the stock arrives (which is never very long), your Rain Check assures you of getting it (or a comparable product) at the advertised price - even if the relevant promotion has ended! At Dick Smith Electronics, come rain or shine, we stand by our word!

\* Rain checks not available where stocks are advertised as limited, discontinued or clearance lines.



# DATAK

## Make Your Own PCBs



### Photo-Etch PCB Kit ER-4

Everything you need to generate your own 1:1 artwork from diagrams, magazine art, originals...whatever! What's more, you don't destroy your original art in the process.

Comes with 125mm x 150mm print frame, Pos-Neg film, film processing pack, yellow filter, negative acting etch resist, resist developer, blank copper circuit boards, dry concentrate etchant 1:1 resist patterns, tapes and comprehensive instructions. Cat N-5700

Note: Trays and exposure light are not included.

### Direct Etch Kit ER1-D

For making PCB's without art. Ideal for one-off applications. Comes with a good assortment of resist patterns, 4 blank copper-clad boards, dry ferric chloride etchant and instructions... all in a handy plastic storage box. Cat N-5702

### Negative Resist Developer ER-8

Will develop N-5907 and other negative active photo resists. Resist areas not hardened by UV light are dissolved away. Hardened areas remain unaffected. Not to be used with positive acting resists. 483ml.

Cat N-5905

### Positive/Negative Film Refills

Make negative or positive from either opaque or translucent artwork in one step. Will accept retouching with photo opaque, pencil, Indian ink or dry transfers.

ER-9: 2 sheets: 12" x 14"

Cat N-5709

ER-5: 6 sheets: 5" x 6"

Cat N-5705

### Makes Soldering Easier! Tinning Powder ER-18

Designed to plate bare copper circuit boards to make soldering easier. It can also be used to plate edge card connector fingers when a low, stable contact resistance is required. Will plate up to 1500sq. mm of copper with approx. 0.001mm of bright tin. Plating takes about 10 minutes. Approx. 600ml.

Cat N-5730

### Datak PCB Manual

A great way to learn about the PCB process. Gives step by step instructions and tells you what chemicals and accessories you'll need to produce professional PCB's.

Cat N-5701

### Film Process Chemical Pack ER-6

Contains three packs of chemicals which make approx. 600ml of high contrast lithographic film developer and 600ml of acid fixer. Handles up to 15 sheets of 5" x 6" Pos-Neg film.

Cat N-5909

### Negative Photo Resist ER-71

A cinnamate resist in pump spray bottle. Simply coat the board and expose it to UV light through a negative of the circuit pattern, then develop in N-5905 Negative Resist Developer ER-8. 117ml bottle covers approx 4000sq. mm.

Cat N-5907

### Direct Etch Pen

It's so easy to use! The pen is filled with a lacquer ink which is impervious to aqueous PC etch solutions. Ideal for touch-ups or direct etch boards.

Cat N-5180

### PCB Tapes

Precision slit tapes to make PCB design easy! This highly flexible crepe tape has a strong adhesive to prevent peeling or creeping on the curves. All tapes come in 6ft lengths (approx. 2 metres).

0.031"	Cat N-5780	0.080"	Cat N-5786
0.040"	Cat N-5782	0.093"	Cat N-5788
0.062"	Cat N-5784	0.125"	Cat N-5790

**\$5<sup>95</sup> ea**

### Flexy Wire Marker FD-1

These wire markers make wiring a project much easier as they allow you to identify each end of the wire where colour coding is not available. Each marker splits into three sections, there's one for each end of the wire and one for the terminal block. Pack comes with 4 marker sets. Cat N-5767

**\$5<sup>95</sup> pk**

### Adhesive Copper Foil CF-3

Ideal for modifying or repairing printed circuit boards, or it can be applied as shielding for instrument cases, etc. Simply peel-off the backing and apply the copper foil. It's very thin and can be bent or moulded around almost anything. Pack contains one 34" x 10" (864mm x 254mm) sheet. Cat N-5769

### DRY TRANSFERS

#### TITLES

##### Audio, TV, Hi-Fi

Five 3 1/4" x 5" sheets, covering audio, broadcast, recording and stereo and one letter/number sheet. In black or white.

Black Cat N-5753

White Cat N-5754

**\$12<sup>95</sup>/pk**

#### Test & Industrial Equipment

A great selection for marking scopes, meters, analyzers, plotters and most other test equipment. Five sheets plus one number/letter sheet.

Black Cat N-5757

White Cat N-5758

**\$12<sup>95</sup>/pk**

#### Meter/Instrument Transfers

MilliVolts, Volts, x100, x1K, DC, Amperes...it's all there. Ideal for use with our N-5752 meter dial pattern and universal panel meters.

Cat N-5751

**\$6<sup>95</sup> pk**

#### Amateur Radio & TV

Designed for RF and communications equipment. Five 120 x 190mm sheets plus one number/letter sheet.

Black Cat N-5755

White Cat N-5756

**\$12<sup>95</sup>/pk**

#### Dial And Meter Markings

Rotary switch patterns, arrows, lines, graduations and numbers. Three assorted black and white sheets in all. Cat N-5750

**\$12<sup>95</sup> pk**

#### Transfer Alphabets

Ideal for lettering control panels, dialplates, meters, circuit boards.... anything. Suitable for metal, plastic, wood, painted surfaces and paper. There are two packs to choose from, each pack contains six sheets of letters.

1/8" (3.175mm) high KA63 Cat N-5761 **\$12<sup>95</sup>**

1/4" (6.35mm) high KA64 Cat N-5763 **\$12<sup>95</sup>**

#### PATTERNS

##### 16 Pin Dual Inline

32 in set. 16 pin dual inline package PC patterns.

0.125" x 0.70". Cat N-5764

**\$5<sup>95</sup>**

##### 16 Pin DIP

Narrow pads in set of 32 patterns. 0.125" x 0.053"

Cat N-5765

**\$5<sup>95</sup>**

#### Sampler Assortment

A fantastic pack to get you started! Contains sample sheets from 17 Jotdraft sets.... just about every imaginable type of marking and pattern in this value pack. Cat N-5766

**\$19<sup>95</sup>**

#### Universal Dip Patterns

These sheets allow you to make any DIP pattern. 48 in each pack with 40 leads. 0.1" x 0.6" centres. Scale 1 X. Cat N-5768

**\$18<sup>95</sup>**

#### DONUTS

0.08" 0.080" OD x 0.031" ID on precision 0.200" x 0.300" centres. 380 donuts in set. Cat N-5770

**\$5<sup>95</sup>**

0.1" 0.100" OD x 0.031" ID on precision 0.200" x 0.300" centres. 380 donuts in set. Cat N-5772

**\$5<sup>95</sup>**

0.125" 0.125" OD x 0.031" ID on precision 0.200" x 0.300" centres. 380 donuts in set. Cat N-5774

**\$5<sup>95</sup>**

0.150" 0.150" OD x 0.31" ID on precision 0.200" x 0.300" centres. 380 donuts in set. Cat N-5776

**\$5<sup>95</sup>**





## High Resolution Positive Resist

Easy to use and can be exposed to any UV light source (even the sun). Ideal for use with 1:1 tapes and pads. Develops in caustic solution or Electrolube developer (N-1002). 200g spray.

Cat N-1003 **\$34<sup>95</sup>**

## Electrolube Developer

Suits positive resist (N-1003). It's safer and simpler than mixing caustic solution. Simply develop your pattern in this, dry and etch. 250ml bottle of 4:1 concentrate.

Cat N-1002 **\$15<sup>95</sup>**



## PCB Marking Kit

Ideal for making those one-off quickie boards (where there's no photo art available) or for repairing photoresist prior to etching. Simply draw the resist pattern straight onto the PCB. You get two different coloured pens and an eraser.

Cat N-5175 **\$16<sup>95</sup>**

## Ferric Chloride Etchant

Supplied in a handy 500ml no-spill bottle of working solution (ferric chloride). No hassles with beads and hot water.

\* Cat N-5652 **\$11<sup>95</sup>**

## Etching Kit

Everything you need for making PCB's. PC resist pen, etchant, resist solvent, flux, cleaning material and sample PCB.

Cat N-5650 **\$24<sup>95</sup>**

\* Note: Due to the corrosive nature of N-5652, transport restrictions may apply.



## Matrix Board Pins

Pack of 50 matrix board pins for PCB connections. With the matching socket, below, they make connecting and disconnecting quick and easy.

Cat H-5590 **\$3<sup>95</sup>/pk**

Also available: Flat matrix-board pins.

Pack of 25 Cat H-5594 **\$2.95**



## Matrix Board Sockets

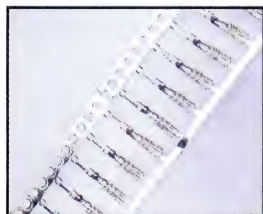
In packs of 25 sockets. They match the matrix pins (H-5590) above. They allow you to simply plug and unplug for PCB connections.

Cat H-5592 **\$5<sup>95</sup>/pk**

## 16 Pin IC PCB Board

Save time, hassles and money with this pre-etched, pre-drilled, pre-cut 16 Pin PCB. Can be used in virtually any project. Measures 54mm x 38mm and has pre-drilled mounting holes.

Cat H-5600 **\$15<sup>00</sup>**



## Blank Printed Circuit Boards

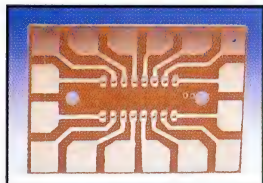
Heavy duty epoxy glass PC board with permanently bonded copper on one or both sides. Available in three sizes.

### Single Sided

150 x 74mm	Cat H-5540	<b>\$1.95</b>
150 x 150mm	Cat H-5545	<b>\$3.95</b>
300 x 300mm	Cat H-5550	<b>\$9.95</b>

### Double Sided

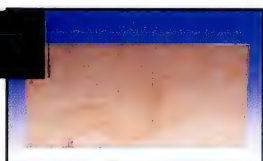
150 x 74mm	Cat H-5555	<b>\$4.95</b>
150 x 150mm	Cat H-5560	<b>\$8.95</b>
300 x 300mm	Cat H-5565	<b>\$22.95</b>



## Aluminium Sheet

Blank aluminium sheet which is ideal for making front panels, folding into small boxes, etc. It's 18 gauge and 300 x 300mm.

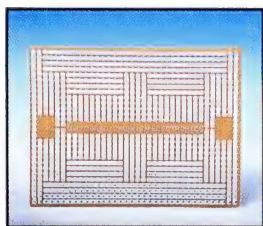
Cat H-2560 **\$9<sup>95</sup>**



## Prototype Board

Designed by our R&D staff! It's similar to 'Veroboard' style products but has the advantages of having tracks run in both directions. Primarily designed for projects using linear ICs, though simple digital designs can be accommodated. Typically, 2 x 14 or 16 PIN devices or 5 x 8 PIN devices can be mounted without overcrowding. Tracks are copper with corrosion resistant plating and punched with 936 holes on a 0.1" grid.

Cat H-5660 **\$4<sup>95</sup>**



## Breadboard Kits

These breadboard kits are ideal for low voltage designs. They're faster, easier and cleaner than working directly onto PCB's. They're mounted on a base-plate with non slip feet and holes for binding posts. Each has a good selection of jump wires and binding posts.

### Small Kit

800 holes arranged into 160 buses plus 4 distribution buses.

Cat H-4020 **\$39<sup>95</sup>**

### Medium Kit

1260 holes arranged into 256 buses plus 6 distribution buses.

Cat H-4040 **\$49<sup>95</sup>**

### Large Kit

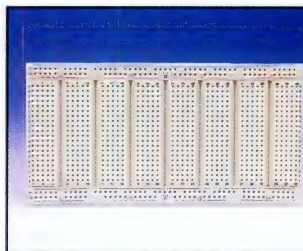
2520 holes arranged into 504 buses plus 14 distribution buses.

Cat H-4042 **\$89<sup>95</sup>**

### Extra Large Kit

3200 holes arranged into 640 buses plus 6 distribution buses.

Cat H-4022 **\$99<sup>95</sup>**



## Breadboards

Like the ones above, but without the base-plate. They can be clipped together to make boards to just about any required size. Supplied as board only.

### Small

300 holes in 60 buses plus 2 distribution buses.

Cat H-4035 **\$10<sup>95</sup>**

### Medium

630 holes in 126 buses plus 4 distribution buses.

Cat H-4045 **\$18<sup>95</sup>**

### Large

800 holes in 160 buses plus 10 distribution buses.

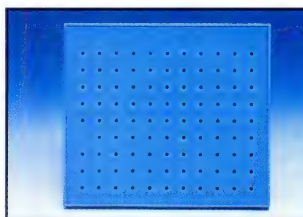
Cat H-4025 **\$19<sup>95</sup>**



## Jump Wire Kit

140 jump wires in 10 different colours and 14 different lengths. All with right-angled bends at each end. In handy plastic divider box.

Cat H-4030 **\$9<sup>95</sup>**



## Plastic Project Board

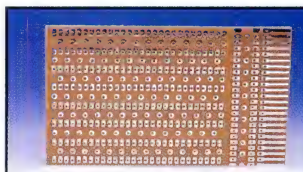
A 122 x 110 x 14mm plastic Breadboard as used in the popular Funway Into Electronics series. It has a matrix of 98 holes for making mechanical connections and securing components.

Cat H-4050 **\$1<sup>95</sup>**

## Plug-in IC Boards

With 2.54mm pin spacing to accept up to 14 x 14-pin or 16-pin IC's, or up to 20 mini-plug IC's. With silver plated lands and 24-way plug etched at one end for use with a 24-way edge connector. 60mm x 100mm.

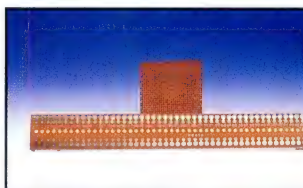
Cat H-5610 **\$3<sup>95</sup>**



## Matrix Board

Tough phenolic board with punched holes. Ideal for prototypes, bread boards, projects, etc. 2.5mm hole spacings on a 75mm x 76mm board.

Cat H-5310 **\$2<sup>95</sup>**



## Printed Mounting Strip

A handy 47 way mounting strip for resistors, capacitors, etc. Terminals are numbered for easy identification.

Cat H-6610 **\$2<sup>95</sup>**

## Printed Stripboards

The most versatile board of the lot! Etched copper strips are pre-drilled and plated ready for solder. The alphanumeric grid facilitates positive pin identification. Each board has 2.54mm hole spacings.

95 x 308mm Board Cat H-5112 **\$8.95**

88 x 153mm Board Cat H-5612 **\$6.95**

76 x 88mm Board Cat H-5614 **\$2.95**

## Versa Strip Board

Continuous pre-drilled stripping on a high grade insulator. It's similar to the old English Veroboard. 2.54mm hole spacings. 88mm x 153mm

Cat H-5616 **\$6<sup>95</sup>**



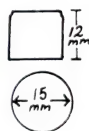


## METRIC RANGE

Ideal for new projects or as replacement knobs. A great range of sizes and styles. All fit standard 6mm spline.

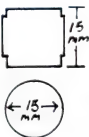
Tiny plastic knob finished in black with silver shoulder and pointer. Push-on fit. 15mm diam. 12mm deep.

**\$1.45**  
Cat P-7000  
10 or more \$1.23<sup>ea</sup>



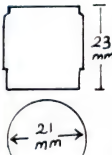
Plastic black knob with white shoulder and pointer. Fluted sides for positive grip. Push-on fit. 15mm diam. 15mm deep.

**\$1.45**  
Cat P-7002  
10 or more \$1.23<sup>ea</sup>



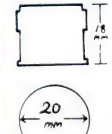
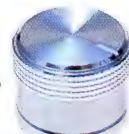
Black plastic knob with silver shoulder and white pointer. Push-on fit. 21mm diam. 23mm deep.

**\$1.95**  
Cat P-7004  
10 or more \$1.66<sup>ea</sup>



Aluminium knob with knurled band for easy grip. Push-on fit. 20mm diam. 18mm deep.

**\$1.95**  
Cat P-7006  
10 or more \$1.66<sup>ea</sup>

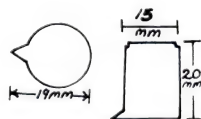


## Coloured Plastic Knobs

They look, and feel great! Ideal for colour coding with mixers, etc. Positive pointer makes setting quicker and easier. Push-on (6mm fluted shaft) fitting. All measure 15mm diam (19mm including pointer) and 20mm deep.

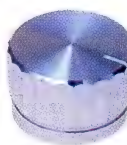
Red Cat P-7050  
Orange Cat P-7052  
Blue Cat P-7054  
Green Cat P-7056

**\$1.95**  
<sup>ea</sup>  
10 or more \$1.85<sup>ea</sup>



A popular knob in satin finish aluminium. Fluted sides enhance appearance and add positive grip. Push-on fit. 25mm diam. 17mm deep.

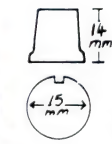
**\$1.95**  
Cat P-7008  
10 or more \$1.66<sup>ea</sup>



The smallest of four matching knobs. Black plastic with integral pointer and skirt. 12mm diam (15mm including skirt) and 14mm deep.

Push-on. Cat P-7010  
Screw fit. Cat P-7020

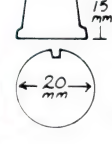
**\$1.25**  
<sup>ea</sup>  
10 or more \$1.13<sup>ea</sup>



Medium size plastic knob to match the one above. Ideal as a tone control or switch knob. 16mm diam (20mm including skirt) and 15mm deep.

Push-on. Cat P-7012  
Screw fit. Cat P-7022

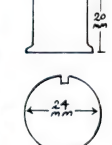
**\$1.35**  
<sup>ea</sup>  
10 or more \$1.13<sup>ea</sup>



Larger knob in this skirted series. Available in push-on or screw fit. 20mm diam (24mm including skirt) and 20mm deep.

Push-on. Cat P-7014  
Screw fit. Cat P-7024

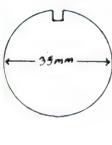
**\$1.75**  
<sup>ea</sup>  
10 or more \$1.49<sup>ea</sup>



Extra large skirted knob. Ideal as a volume or function control knob. 28mm diam (35mm including skirt) and 18mm deep.

Push-on. Cat P-7016  
Screw fit. Cat P-7026

**\$1.95**  
<sup>ea</sup>  
10 or more \$1.66<sup>ea</sup>



## IMPERIAL RANGE

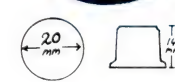
Suitable as replacement knobs or for new projects and designs. All fit standard 1/4" shaft and are grub screw fix.

Small plastic skirted knob with dot pointer. 15mm diam (20mm including skirt) and 15mm deep.

**\$1.75**  
Cat P-7100  
10 or more \$1.49<sup>ea</sup>

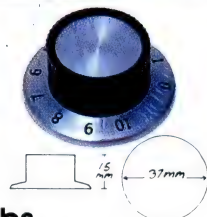
A very popular skirted knob with deep fluted sides and silver top insert. 24mm diam (27mm including skirt) and 16mm deep.

**\$1.65**  
Cat P-7106  
10 or more \$1.40<sup>ea</sup>



A superb instrument knob with wide calibrated (0-10) skirt. 24mm diam. (37mm including skirt) and 15mm deep.

**\$1.95**  
Cat P-7104  
10 or more \$1.66<sup>ea</sup>



## Hi-Fi, Audio Knobs

Quality hi-fi, audio aluminium knobs designed specifically for Dick Smith Electronics. They have an attractive matt black anodised finish and indicator cut. They're push-fit (onto any standard 6mm metric spline) and have a spline depth of 17mm.

**20 x 18mm**  
Cat P-7114  
**\$1.95**  
10 or more \$1.66<sup>ea</sup>

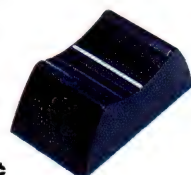
**30 x 18mm**  
Cat P-7112  
**\$2.95**  
10 or more \$2.51<sup>ea</sup>

**40 x 20mm**  
Cat P-7110  
**\$3.95**  
10 or more \$3.36<sup>ea</sup>

## Slider Pot Knob

This beautifully designed knob is 12mm x 23mm and it's designed to fit 6mm (width) slider pots. It's shaped to fit the fingers for easier control and is of the type used in professional mixers, studios, etc.

**95¢**  
Cat P-7150  
10 or more 81¢<sup>ea</sup>



## Vernier Drive

Precision vernier drive designed for front panel mounting. Suits 1/4" shaft (& knobs). Ratio (approx) 6:1. Scale 0-100, in single increments, over 180°. Fixes to shaft with two grub screws for added durability. 50mm diameter.

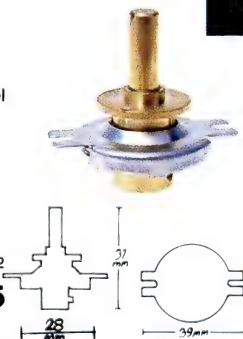
**\$19.95**  
Cat P-7170  
10 or more \$17.96<sup>ea</sup>



## Quality Reduction Drives

A superb precision reduction drive with smooth, positive movement for the finest control. It's ideal for panel mounting and at only 28mm diameter it's perfect for those tight spots. Inbuilt lugs make mounting a breeze (31-35mm mounting holes). 37mm overall length. 1/4" shaft.

**\$15.95**  
Cat P-7172  
10 or more \$14.36<sup>ea</sup>





# Rotary Pots & Switches

## Rotary Switches

Precision made rotary switches suitable that are suitable for PCB mounting or panel mounting (9mm mounting hole). Shafts are of the standard (6mm) metric fluted type. They will accept any standard 6mm knob. Switch contacts are 'make before break' in order to help eliminate clicking and popping. Matching washers and nuts are provided with every switch.

Poles	Positions	Cat No.
6	2	P-7502
4	3	P-7504
3	4	P-7506
2	5	P-7508
2	6	P-7510

## Variable Position Rotary Switches

A great range of quality programmable position rotary switches. They're fully enclosed with a plastic shaft and suitable for grub-screw style knobs. Supplied with nut, lock washer and 'stop ring' which allows you to vary the number of switching positions. You can program 2 to 12 positions @ 30° indexing. Rated 240V @ 150mA with silver plated brass contacts.

Poles	Positions	Cat No.
3	2-4	P-7516
1	2-12	P-7518
4	2-3	P-7520
2	2-6	P-7522



Lock-Washer

**\$2.95** ea  
10 or more \$2.51ea

## ROTARY POTS

### 24mm Single Gang Rotary Pots

Metric Linear: Mounting hole - 8mm

Type (Ohms)	Cat No.	Type (Ohms)	Cat No.
500	R-6802	50K	R-6809
1K	R-6803	100K	R-6810
5K	R-6805	500K	R-6812
10K	R-6806	1M	R-6813
20K	R-6807	2M	R-6814

Metric Log: Mounting hole - 8mm

Type (Ohms)	Cat No.
10K	R-6820
50K	R-6823
100K	R-6824

### 24mm Single Gang With Switch

Metric Log: Mounting hole - 8mm

Type (Ohms)	Cat No.
10K	R-6879
1M	R-6888

### 24mm Dual Gang Rotary Pots

Metric Linear: Mounting hole - 8mm

Type (Ohms)	Cat No.
10K	R-6834
20K	R-6836
50K	R-6839
100K	R-6840

Metric Log: Mounting hole - 8mm

Type Ohms	Cat No.
50K	R-6853

### 24mm Dual Rotary Pots - Special Function

With 25mm (long) fluted shaft and require a 7mm mounting hole.

Metric Linear:

Type (Ohms)	Cat No.
10K Half Travel	R-8002
25K Centreclick	R-8003
100K Centreclick	R-8004

Metric Log:

Type (Ohms)	Cat No.
50K Multiclick.	R-8001
10 clicks/detents.	

### 17mm Miniature Rotary Pots with Switch

All require an 8mm mounting hole.

17mm Metric Log:

Type (Ohms)	Cat No.	Type (Ohms)	Cat No.
1K	R-1972	20K	R-1979
5K	R-1974	50K	R-1970
10K	R-1977		

### 16mm Special Function 'Click'

Multi-Click-50K, 41 'clicks' Dual-Gang/Log	<b>\$5.95</b>
R-7800	
Multi-Click-100K, 41 'clicks' Dual-Gang/Log	<b>\$5.95</b>
R-7802	
Centre-Click-25K Dual-Gang/Lin.	<b>\$4.95</b>
R-7810	
Centre-Click-100K Dual-Gang/Lin.	<b>\$4.95</b>
R-7820	



### 16mm Single Gang Rotary

Metric Linear: Mounting hole - 7mm

Type (Ohms)	Cat No.
500	R-7549
1K	R-7551
5K	R-7553
10K	R-7555
25K	R-7557
50K	R-7559

Metric Log: Mounting Hole - 7mm

Type (Ohms)	Cat No.	Type (Ohms)	Cat No.
500	R-7500	100K	R-7512
1K	R-7502	250K	R-7514
5K	R-7504	500K	R-7516
10K	R-7506	1M	R-7518
25K	R-7508	2M	R-7520
50K	R-7510		

### 16mm Dual Gang Rotary Pots

Metric Linear: Mounting Hole - 8mm

Type (Ohms)	Cat No.	Type (Ohms)	Cat No.
5K	R-7653	100K	R-7661
10K	R-7655	500K	R-7665
25K	R-7657	1M	R-7667
50K	R-7659	2M	R-7669

Metric Log: Mounting Hole - 8mm

Type (Ohms)	Cat No.	Type (Ohms)	Cat No.
5K	R-7604	100K	R-7612
10K	R-7606	500K	R-7616
25K	R-7608	1M	R-7618
50K	R-7610	2M	R-7620

Wire Wound Pots Quality Australian Made. Rated at 3 watts. 9mm mounting hole

Type (Ohms)	Cat No.	Type (Ohms)	Cat No.
5	R-6901	500	R-6913
10	R-6903	1K	R-6915
25	R-6905	2K	R-6917
50	R-6907	5K	R-6921
100	R-6909	7.5K	R-6923
200	R-6911	10K	R-6925

### Vertical Mount Trimpots Horizontal Adjust. 5mm

Type (Ohms)	Cat No.	Type (Ohms)	Cat No.
100	R-1929	20K	R-1943
200	R-1931	50K	R-1945
500	R-1933	100K	R-1947
1K	R-1935	200K	R-1949
2K	R-1937	500K	R-1951
5K	R-1939	1M	R-1953
10K	R-1941	2M	R-1954

### Large Vertical Mount Trimpots

Horizontal Adjust. 10mm

Type (Ohms)	Cat No.	Type (Ohms)	Cat No.
100	R-1956	20K	R-1963
200	R-1957	50K	R-1964
500	R-1958	100K	R-1965
1K	R-1959	200K	R-1966
2K	R-1960	500K	R-1967
5K	R-1961	1M	R-1968
10K	R-1962	2M	R-1969

### Horizontal Mount Trimpots Vertical Adjust 5mm

Type (Ohms)	Cat No.	Type (Ohms)	Cat No.
100	R-1760	20K	R-1773
200	R-1761	50K	R-1775
500	R-1763	100K	R-1777
1K	R-1765	200K	R-1779
2K	R-1767	470K	R-1781
5K	R-1769	1M	R-1783
10K	R-1771	2M	R-1784

### Multi-Turn Trimpots

As used in a large variety of test gear, precision instruments, etc. Quality trimpots with 10 turns from end to end.

Type (Ohms)	Cat No.	Type (Ohms)	Cat No.
1K	R-1900	20K	R-1902
5K	R-1904	50K	R-1903
10K	R-1901	100K	R-1905

### Multi-Turn Tuning Pots

High quality 100K tuning pots with 20 turns from end to end. PCB mount, they're ideal for tuning adjustments in variable capacitance diode television sets and radio receivers or any resistance adjustment. Two types available.

100K Ohm Tuning Pot **\$3.95** 10 or more \$3.36ea

100K Ohm Tuning Pot With 3 Position Bandswitch. Cat R-1912

50K Slider Pot **\$5.95** 10 or more \$5.06ea

Quality 50K ohm linear pot. It's 73mm long with 45mm travel.

Cat R-1980

**\$2.95** 10 or more \$2.45 ea



**Note:** While most Metal Film resistors are currently supplied in the traditional 5-band colour code, 4-band types will also be stocked. 4 band resistors are easier to read and consequently help prevent confusion when trying to translate the band information. The colour band indicating 1% tolerance is still brown.

## 1/4W Metal Film Resistors

At long last, E24 range resistors.... all 1% tolerance. E24 means that you now get closer values to those you are after, rather than the E12 'Preferred Values'.

Value in Ohms	Cat No.	Value in Ohms	Cat No.
10	R-0526	220	R-0558
11	R-0527	240	R-0559
12	R-0528	270	R-0560
13	R-0529	300	R-0561
15	R-0530	330	R-0562
16	R-0531	360	R-0563
18	R-0532	390	R-0564
20	R-0533	430	R-0565
22	R-0534	470	R-0566
24	R-0535	510	R-0567
27	R-0536	560	R-0568
30	R-0537	620	R-0569
33	R-0538	680	R-0570
36	R-0539	750	R-0571
39	R-0540	820	R-0572
43	R-0541	910	R-0573
47	R-0542	1.0k	R-0574
51	R-0543	1.1k	R-0575
56	R-0544	1.2k	R-0576
62	R-0545	1.3k	R-0577
68	R-0546	1.5k	R-0578
75	R-0547	1.5k	R-0579
82	R-0548	1.8k	R-0580
91	R-0549	2.0k	R-0581
100	R-0550	2.2k	R-0582
110	R-0551	2.4k	R-0583
120	R-0552	2.7k	R-0584
130	R-0553	3.0k	R-0585
150	R-0554	3.3k	R-0586
160	R-0555	3.6k	R-0587
180	R-0556	3.9k	R-0588
200	R-0557	4.3k	R-0589

Value in Ohms	Cat No.	Value in Ohms	Cat No.
4.7k	R-0590	100k	R-0624
5.1k	R-0591	110k	R-0625
5.6k	R-0592	120k	R-0626
6.2k	R-0593	130k	R-0627
6.8k	R-0594	150k	R-0628
7.3k	R-0595	160k	R-0629
8.2k	R-0596	180k	R-0630
9.1k	R-0597	200k	R-0631
10k	R-0598	220k	R-0632
11k	R-0599	240k	R-0633
12k	R-0600	270k	R-0634
13k	R-0601	300k	R-0635
15k	R-0602	330k	R-0636
16k	R-0603	360k	R-0637
18k	R-0604	390k	R-0638
20k	R-0605	430k	R-0639
22k	R-0606	470k	R-0640
24k	R-0607	510k	R-0641
27k	R-0608	560k	R-0642
30k	R-0609	620k	R-0643
33k	R-0612	680k	R-0644
36k	R-0613	750k	R-0645
39k	R-0614	820k	R-0646
43k	R-0615	910k	R-0647
47k	R-0616	1M	R-0648
51k	R-0617		
56k	R-0618		
62k	R-0619		
68k	R-0620		
75k	R-0621		
82k	R-0622		
91k	R-0623		

9¢ each

100 or more 7¢ each

## Carbon Film Resistors

E12 'preferred value' carbon film resistors. 5% tolerance in 1/4W, 1/2W and 1W values. An economical alternative where cost is important.

Value in Ohms	1/4W 5¢ ea. 50 up 3¢ ea	1/2W 10¢ ea 50 up 7¢ ea	1W 20¢ ea 50 up 14¢ ea
0.0	R-1000		
1.0	R-1002	R-1202	R-1402
1.2	R-1004	R-1204	R-1404
1.5	R-1006	R-1206	R-1406
1.8	R-1008	R-1208	R-1408
2.2	R-1010	R-1210	R-1410
2.7	R-1012	R-1212	R-1412
3.3	R-1014	R-1214	R-1414
3.9	R-1016	R-1216	R-1416
4.7	R-1018	R-1218	R-1418
5.6	R-1020	R-1220	R-1420
6.8	R-1022	R-1222	R-1422
8.2	R-1024	R-1224	R-1424
10	R-1026	R-1226	R-1426
12	R-1028	R-1228	R-1428
15	R-1030	R-1230	R-1430
18	R-1032	R-1232	R-1432
22	R-1034	R-1234	R-1434
27	R-1036	R-1236	R-1436
33	R-1038	R-1238	R-1438
39	R-1040	R-1240	R-1440
47	R-1042	R-1242	R-1442
56	R-1044	R-1244	R-1444
68	R-1046	R-1246	R-1446
82	R-1048	R-1248	R-1448
100	R-1050	R-1250	R-1450
120	R-1052	R-1252	R-1452
150	R-1054	R-1254	R-1454
180	R-1056	R-1256	R-1456
220	R-1058	R-1258	R-1458
270	R-1060	R-1260	R-1460
330	R-1062	R-1262	R-1462
390	R-1064	R-1264	R-1464
470	R-1066	R-1266	R-1466
560	R-1068	R-1268	R-1468
680	R-1070	R-1270	R-1470
820	R-1072	R-1272	R-1472
1.0k	R-1074	R-1274	R-1474
1.2k	R-1076	R-1276	R-1476
1.5k	R-1078	R-1278	R-1478
1.8k	R-1080	R-1280	R-1480
2.2k	R-1082	R-1282	R-1482
2.7k	R-1084	R-1284	R-1484

Value in Ohms	1/4W 5¢ ea 50 up 3¢ ea	1/2W 10¢ ea 50 up 7¢ ea	1W 20¢ ea 50 up 14¢ ea
3.3k	R-1086	R-1286	R-1486
3.9k	R-1088	R-1288	R-1488
4.7k	R-1090	R-1290	R-1490
5.6k	R-1092	R-1292	R-1492
6.8k	R-1094	R-1294	R-1494
8.2k	R-1096	R-1296	R-1496
10k	R-1098	R-1298	R-1498
12k	R-1100	R-1300	R-1500
15k	R-1102	R-1302	R-1502
18k	R-1104	R-1304	R-1504
22k	R-1106	R-1306	R-1506
27k	R-1108	R-1308	R-1508
33k	R-1112	R-1312	R-1512
39k	R-1114	R-1314	R-1514
47k	R-1116	R-1316	R-1516
56k	R-1118	R-1318	R-1518
68k	R-1120	R-1320	R-1520
82k	R-1122	R-1322	R-1522
100k	R-1124	R-1324	R-1524
120k	R-1126	R-1326	R-1526
150k	R-1128	R-1328	R-1528
180k	R-1130	R-1330	R-1530
220k	R-1132	R-1332	R-1532
270k	R-1134	R-1334	R-1534
330k	R-1136	R-1336	R-1536
390k	R-1138	R-1338	R-1538
470k	R-1140	R-1340	R-1540
560k	R-1142	R-1342	R-1542
680k	R-1144	R-1344	R-1544
820k	R-1146	R-1346	R-1546
1M	R-1148	R-1348	R-1548
1.2M	R-1150	R-1350	R-1550
1.5M	R-1152	R-1352	R-1552
1.8M	R-1154	R-1354	R-1554
2.2M	R-1156	R-1356	R-1556
2.7M	R-1158	R-1358	R-1558
3.3M	R-1160	R-1360	R-1560
3.9M	R-1162	R-1362	R-1562
4.7M	R-1164	R-1364	R-1564
5.6M	R-1166	R-1366	R-1566
6.8M	R-1168	R-1368	R-1568
8.2M	R-1170	R-1370	R-1570
10M	R-1172	R-1372	R-1572

## Metal Can Electrolytics

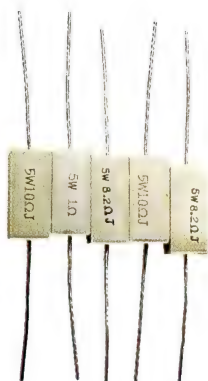
Val. in uF	Volt.	Cat.No.	Price 1-9	10 Up
2500	80	R-4572	\$8.50	\$7.23
8000	75	R-4590	\$24.95	\$21.21
10000	10	R-4480	\$5.95	\$5.06
10000	40	R-4595	\$6.95	\$6.11



## 5 Watt Wire Wound Resistors

Wire wound resistors encased in a ceramic/cement material for greater heat dissipation characteristics. Used mostly in high powered equipment.

Value in ohms	Cat No.
0.1	R-1600
0.22	R-1603
0.47	R-1601
1.0	R-1602
1.2	R-1604
1.5	R-1606
2.2	R-1610
3.3	R-1614
4.7	R-1618
5.6	R-1620
6.8	R-1622
8.2	R-1624
10	R-1626
12	R-1628
15	R-1630
18	R-1632
22	R-1634
27	R-1636
33	R-1638
39	R-1640
47	R-1642
56	R-1644
68	R-1646
82	R-1648
100	R-1650
120	R-1652
150	R-1654
180	R-1656
220	R-1658
270	R-1660
330	R-1662
390	R-1664
470	R-1666
560	R-1668
680	R-1670
820	R-1672
1.0k	R-1674
1.2k	R-1676
1.5k	R-1678
1.8k	R-1680
2.2k	R-1682
2.7k	R-1684
3.3k	R-1686
3.9k	R-1688
4.7k	R-1689
8.2k	R-1708



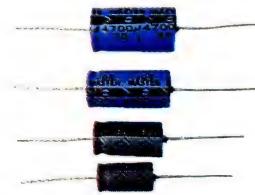
65¢ each  
50 or more  
56¢ each

## Electrolytics

Electrolytics come in a range of different shapes and sizes but (with the exception of the bipolar type) they have one thing in common: they are polarised and must be connected into the circuit correctly. As you will note, very large capacitances are possible with electrolytic types.

### Axial (RT) Type

Val. in uF	Volt.	Cat No.	Price 1-9	10 Up
1.0	350	R-4015	.75	.64
2.2	63	R-4020	.45	.38
3.3	25	R-4025	.45	.38
10	16	R-4055	.45	.38
10	63	R-4065	.50	.43
10	80	R-4068	.65	.55
22	25	R-4086	.45	.38
22	63	R-4091	.45	.47
33	16	R-4095	.45	.38
47	25	R-4110	.45	.38
100	10	R-4125	.45	.38
100	25	R-4130	.45	.47
100	63	R-4135	.95	.81
220	16	R-4145	.60	.51
220	25	R-4150	.60	.51
470	63	R-4165	\$1.85	\$1.57
1000	16	R-4175	\$1.25	\$1.10
1000	25	R-4180	\$1.50	\$1.31
1000	35	R-4185	\$1.85	\$1.63
1000	63	R-4190	\$2.95	\$2.60
2200	16	R-4196	\$1.50	\$1.32
2200	25	R-4201	\$1.95	\$1.66
2200	35	R-4206	\$2.95	\$2.60
2200	50	R-4211	\$3.95	\$3.48
4700	35	R-4215	\$4.95	\$4.36



**Please Note:** The 50-up price shown for resistors is for 50 of the same type (wattage) in mixed values (ohms). We've made this change in policy to provide you, our valued customers, with greater flexibility and buying power.



# Capacitors

## Bipolar Electrolytics (BP or NP)

These electrolytics are specially made not to be polarised. They are designed for use where the voltage polarity across them changes; Eg. In speaker cross-overs. They are rated at 50 Volts.

Val. in uF	Cat.No.	Price 1-9	10 Up
2.2	R-4600	.50	.40
3.3	R-4605	.50	.40
4.7	R-4610	.50	.40
6.8	R-4620	.50	.40
10	R-4630	.75	.55
22	R-4640	.85	.60
47	R-4650	\$1.55	\$1.08



## Single Ended Radial (RB) (PCB Mounting)

Val.	Volt.	Cat.No.	Price 1-9	10 Up
0.47uF	50	R-4290	.25	.17
0.47uF	100	R-4292	.40	.28
1.0uF	50	R-4295	.25	.17
1.0uF	100	R-4297	.45	.31
2.2uF	100	R-4302	.35	.24
4.7uF	25	R-4310	.35	.24
4.7uF	80	R-4312	.35	.24
10uF	16	R-4316	.40	.28
10uF	25	R-4315	.35	.24
10uF	63	R-4317	.50	.40
22uF	25	R-4319	.30	.21
22uF	50	R-4321	.45	.31
33uF	10	R-4330	.30	.21
33uF	35	R-4340	.35	.24
47uF	25	R-4350	.35	.24
100uF	16	R-4360	.35	.24
100uF	25	R-4370	.40	.28
220uF	16	R-4380	.45	.31
330uF	10	R-4397	.75	.52
330uF	25	R-4400	.75	.52
470uF	10	R-4407	.75	.52
470uF	16	R-4410	.85	.75
470uF	25	R-4420	.90	.80
680uF	16	R-4435	.85	.75
1000uF	16	R-4440	.95	.66
1000uF	25	R-4450	\$1.15	.81
2200uF	16	R-4459	\$1.25	.87
5600uF	40	R-4475	\$6.95	\$6.83
6800uF	10	R-4470	\$5.95	\$4.17
10000uF	40	R-4483	\$11.95	\$8.37

## Tag/Bead Tantalums

Resin dipped electrolytics which use a tantalum dielectric, giving a very low leakage but a high capacitance for the size of the package. See data section for marking codes.

Val. in uF	Volt.	Cat.No.	Price 1-9	10 up
0.1	35	R-4700	.95	.65
0.22	35	R-4705	.95	.65
0.33	35	R-4710	.95	.65
0.47	35	R-4715	.95	.65
0.68	35	R-4717	.95	.65
1.0	35	R-4720	.95	.65
2.2	35	R-4730	\$1.15	.80
3.3	35	R-4735	\$1.25	.85
4.7	35	R-4740	\$1.35	.95
6.8	35	R-4745	\$1.45	\$1.05
10	25	R-4750	\$1.55	\$1.35
22	16	R-4760	\$1.75	\$1.23
33	16	R-4766	\$1.95	\$1.65
33	10	R-4765	\$1.85	\$1.55
47	6.3	R-4770	\$1.95	\$1.65
100	3	R-4775	\$2.25	\$1.58

## Polystyrene

With a low temperature coefficient, polystyrene capacitors are ideal for use where stability is important. All are rated at 250V DC.

Value in uF	Cat.No.	Value in uF	Cat.No.	Value in uF	Cat.No.
33pF	R-2807	120pF	R-2821	470pF	R-2835
39pF	R-2809	150pF	R-2823	560pF	R-2837
47pF	R-2811	180pF	R-2825	680pF	R-2839
56pF	R-2813	220pF	R-2827	820pF	R-2841
68pF	R-2815	270pF	R-2829	1000pF	R-2843
82pF	R-2817	330pF	R-2831		
100pF	R-2819	390pF	R-2833		

95¢ ea  
10 up 80¢ ea

## High Tolerance Polystyrene

0.001uF, 1%, 63 volt

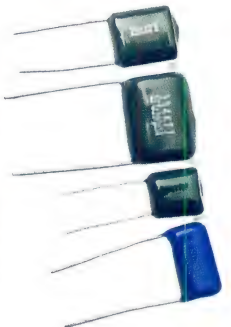
Cat R-2780

95¢ ea 10 up 80¢ ea

## Metallized Polyester Film (Dipped Lacquer)

Often called 'greencaps' because they're usually green in colour. Polyester capacitors are the most widely used of all capacitor types. These polyester caps are all rated at 100V or more. 5% tolerance. See data section for marking codes.

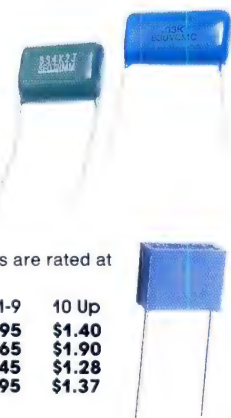
Value in uF	Cat.No.	1-9	10 up	Value in uF	Cat.No.	1-9	10 up
0.001	R-2010	.30	.20	0.033	R-2070	.35	.25
0.0012	R-2012	.30	.20	0.039	R-2075	.35	.25
0.0015	R-2015	.30	.20	0.047	R-2080	.35	.25
0.0018	R-2018	.30	.20	0.056	R-2085	.35	.25
0.0022	R-2020	.30	.20	0.068	R-2090	.35	.24
0.0027	R-2027	.30	.20	0.082	R-2095	.45	.31
0.0033	R-2025	.30	.20	0.1	R-2100	.45	.31
0.0039	R-2030	.30	.20	0.12	R-2102	.45	.32
0.0047	R-2035	.30	.20	0.15	R-2105	.55	.40
0.0056	R-2040	.30	.20	0.22	R-2110	.65	.55
0.0068	R-2045	.30	.20	0.27	R-2115	.75	.65
0.0082	R-2050	.30	.20	0.33	R-2120	.85	.75
0.01	R-2055	.30	.20	0.39	R-2125	.85	.75
0.012	R-2057	.30	.20	0.47	R-2130	.95	.80
0.015	R-2060	.30	.20	1.0	R-2135	\$1.65	\$1.50
0.018	R-2062	.30	.20	2.0	R-2140	\$2.85	\$2.50
0.022	R-2065	.35	.25	3.3	R-2145	\$3.65	\$3.20
0.027	R-2067	.35	.25				



## High Voltage Polyester

Similar to above range, but offering very high voltage rating; 630 volts! Ideal replacements for most capacitors used in valve circuits. 5% tolerance.

Value in uF	Cat.No.	1-9	10 up in uF	Value in uF	Cat.No.	1-9	10 up in uF
0.01	R-2160	.85	.75	0.1	R-2170	\$1.45	\$1.20
0.022	R-2162	.85	.75	0.22	R-2172	\$1.75	\$1.50
0.033	R-2164	.95	.67	0.33	R-2174	\$2.05	\$1.80
0.047	R-2166	\$1.05	.90	0.47	R-2176	\$2.05	\$1.80



## High Voltage MKT

Specifically intended for mains and other suppression applications. These capacitors are rated at 250 volts AC continuous (except R-2470).

Value	Voltage	Cat. No	1-9	10 Up	Value	Voltage	Cat. No	1-9	10 Up
0.01uF	250V AC	R-2730	\$1.25	.95	0.22uF	250V AC	R-2745	\$1.95	\$1.40
0.047F	250V AC	R-2725	\$1.45	\$1.05	0.47uF	250V AC	R-2750	\$2.65	\$1.90
0.1uF	250V AC	R-2720	\$1.75	\$1.23	0.033uF	250V AC	R-2733	\$1.45	\$1.28
0.33uF	250V AC	R-2735	\$2.45	\$1.75	0.001uF	1600V AC	R-2740	\$1.95	\$1.37

## Plastic Film Capacitors

100 Volt MKT caps that are of constant size, making it easier to design and construct circuits. They also have constant lead spacing of 5.08mm and they feature markings on the upper edge so as to make them easier to identify when mounted on the PCB.

Price					10 Up	Price					10 up
Cap MKT 0.001 mFd	100 WV 5%	R-3000	.35	.24	Cap MKT 0.033 mFd	100 WV 5%	R-3019	.40	.28		
Cap MKT 0.0012 mFd	100 WV 5%	R-3001	.35	.24	Cap MKT 0.039 mFd	100 WV 5%	R-3020	.40	.28		
Cap MKT 0.0015 mFd	100 WV 5%	R-3002	.35	.24	Cap MKT 0.047 mFd	100 WV 5%	R-3021	.40	.28		
Cap MKT 0.0018 mFd	100 WV 5%	R-3003	.35	.24	Cap MKT 0.056 mFd	100 WV 5%	R-3022	.40	.28		
Cap MKT 0.0022 mFd	100 WV 5%	R-3004	.35	.24	Cap MKT 0.068 mFd	100 WV 5%	R-3023	.40	.28		
Cap MKT 0.0033 mFd	100 WV 5%	R-3006	.35	.24	Cap MKT 0.082 mFd	100 WV 5%	R-3024	.45	.31		
Cap MKT 0.0039 mFd	100 WV 5%	R-3007	.35	.24	Cap MKT 0.1 mFd	100 WV 5%	R-3025	.45	.31		
Cap MKT 0.0047 mFd	100 WV 5%	R-3008	.35	.24	Cap MKT 0.12 mFd	100 WV 5%	R-3026	.50	.35		
Cap MKT 0.0056 mFd	100 WV 5%	R-3009	.35	.24	Cap MKT 0.15 mFd	100 WV 5%	R-3027	.55	.38		
Cap MKT 0.0068 mFd	100 WV 5%	R-3010	.35	.24	Cap MKT 0.18 mFd	100 WV 5%	R-3028	.55	.38		
Cap MKT 0.0082 mFd	100 WV 5%	R-3011	.35	.24	Cap MKT 0.22 mFd	100 WV 5%	R-3029	.65	.46		
Cap MKT 0.01 mFd	100 WV 5%	R-3012	.35	.24	Cap MKT 0.27 mFd	100 WV 5%	R-3030	.70	.49		
Cap MKT 0.012 mFd	100 WV 5%	R-3014	.35	.24	Cap MKT 0.33 mFd	100 WV 5%	R-3031	.80	.56		
Cap MKT 0.015 mFd	100 WV 5%	R-3015	.35	.24	Cap MKT 0.39 mFd	100 WV 5%	R-3032	.95	.66		
Cap MKT 0.018 mFd	100 WV 5%	R-3016	.35	.24	Cap MKT 0.47 mFd	100 WV 5%	R-3033	\$1.05	.73		
Cap MKT 0.022 mFd	100 WV 5%	R-3017	.40	.28	Cap MKT 1.0 mFd	63 WV 10%	R-3037	\$1.45	\$1.02		
Cap MKT 0.027 mFd	100 WV 5%	R-3018	.40	.28	Cap MKT 1.5 mFd	63 WV 10%	R-3038	\$1.85	\$1.30		

## Ceramics

Disc Ceramics are used where low inductance is required... Eg. in RF circuits. They cover a wide range of values and are rated at 50 volts (except R-2370, 25V). Values up to 100pF are NPO types.

Value	Volt	Cat No.	1-9	10 up	Value	Volt	Cat.No.	1-9	10 up
1pF	50	R-2215	.20	.14	150pF	50	R-2289	.20	.14
1.5pF	50	R-2217	.20	.14	180pF	50	R-2291	.20	.14
2.2pF	50	R-2219	.20	.14	220pF	50	R-2293	.20	.14
2.7pF	50	R-2221	.20	.14	270pF	50	R-2295	.20	.14
3.3pF	50	R-2223	.20	.14	330pF	50	R-2296	.20	.14
3.9pF	50	R-2225	.20	.14	390pF	50	R-2297	.20	.14
4.7pF	50	R-2227	.20	.14	470pF	50	R-2299	.20	.14
5.6pF	50	R-2229	.20	.14	560pF	50	R-2301	.20	.14
6.8pF	50	R-2231	.20	.14	680pF	50	R-2303	.20	.14
8.2pF	50	R-2233	.20	.14	820pF	50	R-2305	.20	.14
10pF	50	R-2235	.20	.14	0.001uF	50	R-2307	.20	.14
12pF	50	R-2237	.20	.14	0.0022uF	50	R-2309	.20	.14
15pF	50	R-2239	.20	.14	0.0033uF	50	R-2311	.20	.14
18pF	50	R-2241	.20	.14	0.0047uF	50	R-2313	.20	.14
22pF	50	R-2243	.20	.14	0.0056uF	50	R-2315	.20	.14
27pF	50	R-2245	.20	.14	0.0068uF	50	R-2317	.20	.14
33pF	50	R-2247	.20	.14	0.0082uF	50	R-2319	.20	.14
39pF	50	R-2249	.20	.14	0.01uF	50	R-2321	.20	.14
47pF	50	R-2251	.20	.14	0.022uF	50	R-2323	.20	.14
56pF	50	R-2253	.20	.14	0.033uF	50	R-2325	.20	.14
68pF	50	R-2257	.20	.14	0.047uF	50	R-2327	.20	.14
82pF	50	R-2259	.20	.14	0.1uF	50	R-2360	.30	.21
100pF	50	R-2285	.20	.14	0.22uF	25	R-2370	.45	.31
120pF	50	R-2287	.20	.14					





## High Voltage Disc Ceramics

Rated at 3kV for mains suppression etc.

Value	Cat No.	1-9	10 Up
100pF	R-2375	\$1.65	\$1.40
120pF	R-2376	\$1.65	\$1.40
150pF	R-2378	\$1.65	\$1.40
180pF	R-2380	\$1.65	\$1.40
220pF	R-2381	\$1.65	\$1.40
270pF	R-2382	\$1.65	\$1.40
320pF	R-2383	\$1.65	\$1.40
390pF	R-2384	\$1.75	\$1.49
470pF	R-2386	\$1.75	\$1.49
560pF	R-2387	\$1.85	\$1.57
680pF	R-2388	\$1.85	\$1.57
820pF	R-2389	\$1.95	\$1.66
0.001uF	R-2390	\$1.95	\$1.66
0.0022uF	R-2392	\$1.95	\$1.66
0.0033uF	R-2393	\$1.95	\$1.66
0.0047uF	R-2394	\$2.15	\$1.83
0.0056uF	R-2395	\$2.35	\$2.00
0.0068uF	R-2396	\$2.45	\$2.08
0.0082uF	R-2398	\$2.65	\$2.25
0.01uF	R-2400	\$2.85	\$2.42

## Ceramic Feedthroughs

Ideal for bypassing DC supply lines, RF amplifiers, noise suppression on motors, etc.

Val. in uF	Volt.	Cat. No.	1-9	10 up
0.001uF	50V	R-2851	.80	.68

## High Discharge (Strobe) Capacitor

Used in circuits such as photographic strobes or flashes where heavy discharge currents occur. Rated at 250 volts AC with discharge resistor built-in. Non polarised.

Val. in uF	Volt.	Cat. No.	1-9	10 up
6.5uF	250V AC	R-2855	\$9.95	\$8.96

## Trimmer Capacitors

Range	Cat. No.	1-9	10 up	Colour Code
9.8-60pF	R-2930	\$1.75	\$1.49	Brown
3-28pF	R-2935	\$1.75	\$1.49	Red
1.8-22pF	R-2940	\$1.95	\$1.66	Green

## Variable Tuning Gang Capacitor

60pF to 160pF miniature solid dielectric tuning capacitor suitable as a replacement in many transistor radios, etc. Ideal for new projects as well. Cat R-2970

	\$1.95
10 or more	\$1.66

## General Purpose NTC Thermistor

Used in amplifiers, power supplies, etc, for temperature sensing purposes. Has 100k resistance at 25°C, with a -5.2% change per °C. Thermal time constant 17 seconds, maximum dissipation 1/2W.

	\$1.75
10 or more	\$1.49

## Small Signal Field-Effect Transistors (FETs)

MPF102	N-Ch	Junction RF-UHF Amp	Z-1832	\$1.65	\$1.40
MPF106	N-Ch	Junction RF-UHF Amp	Z-1840	\$1.95	\$1.70
2N5245	N-Ch	Junction RF-UHF Amp	Z-2335	\$5.95	\$4.95
2N5484	N-Ch	Junction RF-UHF Amp	Z-2340	\$1.95	\$1.70
2N5486	N-Ch	Junction RF-UHF Amp	Z-2073	\$1.95	\$1.70
BFR84	N-Ch	Dual Gate VHF MOSFET	Z-1847	\$6.95	\$5.90
3SK121	N-Ch	Dual Gate UHF GaAsFET	Z-1845	\$9.95	\$8.95

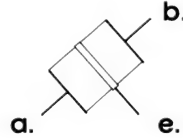
## Power MOSFETs

2SJ49	7A	140V	P-Ch Audio Output	Z-1816	\$12.95	\$11.65
2SK134	7A	140V	N-Ch Audio Output	Z-1815	\$12.95	\$11.65
VN10KM	1A	60V	N-Ch Switch	Z-1820	\$2.95	\$2.55
BUZ71A	14A	50V	N-Ch Switch	Z-1850	\$4.45	\$3.75
BUK456-60A	52A	60V	N-Ch Switch	Z-1852	\$8.95	\$7.85
BUK457-600B	8A	600V	N-Ch Switch	Z-1854	\$10.95	\$9.70

## \*Gaseous Arrester

This surge voltage protector is a 3-electrode, gas-filled arrester which can significantly reduce the effects of high voltage discharges (such as lightning, etc) on electronics equipment. Under normal conditions it's effectively open circuit. The protector conducts when the voltages between its electrodes reach breakdown potentials. An Austel Certified Component (A90/ME/0041).

DC Spark-over Voltage (a-e, b-e) 480-720V  
Nom. impulse discharge current (a+b-e) 20000A



Cat R-1804

\$19.95

Bulk - \$16.96

## \*Metal Oxide Varistors

Voltage dependant, symmetrical resistors. They are used as protection devices... when the rated value is exceeded by a spike or transient, the varistor resistance changes from a very high value to a very low value, thus clamping the transient voltage to a safe level. The model below is ideal for protecting equipment operating from 240 - 250V AC.

### Maximum Ratings

Operating Voltage:	275V RMS			
Pulse Energy Rating:	20 Joules	—	75 Joules	
Peak Pulse Current:	2000 Amps	—	4500 Amps	
Device or equivalent	Rated	Cat No.	Price	10 up
V275LA20A/ TNR15G431K	275V	R-1802	<b>\$3.95</b>	<b>\$3.36</b>

## \*Polyswitch Protectors

Polyswitch Protectors are self resetting, solid state devices which exhibit a huge resistance increase when subjected to fault currents. They offer effective protection for HiFi speakers, storage batteries, motors, power supplies, etc.

### Maximum Blocking Voltage 50 VRMS

Hold Current	On Resistance	Cat No.	Price	10 up
.50	.423	R-1786	\$8.95	\$7.88
.70	.259	R-1787	\$8.95	\$7.88
.90	.177	R-1788	\$9.95	\$8.76
1.15	.123	R-1789	\$9.95	\$8.76
1.35	.093	R-1790	\$10.95	\$9.64
1.85	.059	R-1791	\$10.95	\$9.64
2.45	.039	R-1792	\$11.95	\$10.52
3.05	.030	R-1793	\$12.95	\$11.40
3.90	.021	R-1794	\$14.95	\$13.16

\* For full details, see our DATA SECTION

## Monolithic Multilayer Ceramic Capacitors

Ideal for by-pass applications such as in power supplies, computer boards, etc. They provide excellent stability in a small package.

Value	Voltage	Cat. No.	1-9	10 up
10pF	50	R-1981	.30	.26
15pF	50	R-1982	.30	.26
22pF	50	R-1983	.30	.26
33pF	50	R-1984	.30	.26
47pF	50	R-1985	.30	.26
68pF	50	R-1986	.30	.26
100pF	50	R-1987	.30	.26
120pF	50	R-1988	.30	.26
150pF	50	R-1989	.35	.26
220pF	50	R-1990	.35	.30
330pF	50	R-1991	.40	.30
470pF	50	R-1994	.40	.34
580pF	50	R-1995	.45	.34
1000pF	50	R-1996	.30	.38
1500pF	50	R-1997	.30	.25
2200pF	50	R-1998	.30	.25
3300pF	50	R-1999	.30	.25
4700pF	50	R-2002	.30	.25
6800pF	50	R-2003	.35	.30
0.01uF	50	R-2000	.35	.30
0.015uF	50	R-2004	.40	.34
0.022uF	50	R-2005	.40	.34
0.033uF	50	R-2006	.40	.34
0.047uF	50	R-2007	.45	.38
0.068uF	50	R-2008	.50	.43
0.1uF	50	R-2001	.50	.43
0.15uF	50	R-2180	.35	.30
0.22uF	50	R-2181	.45	.38
0.33uF	50	R-2182	.55	.47
0.47uF	50	R-2183	.60	.51
0.68uF	50	R-2184	.65	.55
1.0uF	25	R-2185	.70	.60

## Transistors

			Price Each	5 Up Each
AC187	Ge NPN Power	Z-1080	\$0.35	\$0.30
AC188	Ge PNP Power	Z-1082	\$0.35	\$0.30
BC327	Si PNP Signal	Z-2240	\$0.35	\$0.30
BC328	Si PNP Signal	Z-2242	\$0.35	\$0.30
BC337	Si NPN Signal	Z-2190	\$0.40	\$0.35
BC338	Si NPN Signal	Z-1350	\$0.30	\$0.25
BC546	Si NPN Signal	Z-1350	\$0.40	\$0.35
BC547	Si NPN Signal	Z-1300	\$0.30	\$0.25
BC548	Si NPN Signal	Z-1308	\$0.30	\$0.25
BC549	Si NPN Signal	Z-1319	\$0.45	\$0.38
BC549C	Si NPN Signal	Z-1329	\$0.40	\$0.35
BC556	Si PNP Signal	Z-1352	\$0.30	\$0.25
BC557	Si PNP Signal	Z-1340	\$0.30	\$0.25
BC558	Si PNP Signal	Z-1348	\$0.40	\$0.35
BC559	Si PNP Signal	Z-1359	\$0.95	\$0.85
BC639	Si NPN Signal	Z-1388	\$0.95	\$0.85
BC640	Si PNP Signal	Z-1389	\$1.15	\$0.95
BD139	Si NPN Power	Z-1443	\$1.15	\$0.95
BD140	Si PNP Power	Z-1444	\$2.15	\$1.85
BD681	Si NPN Pwr Darlington	Z-1462	\$2.15	\$1.85
BD682	Si PNP Pwr Darlington	Z-1460	\$5.95	\$5.35
BF173	Si NPN VHF Signal	Z-1562	\$0.85	\$0.75
BF463	Si PNP Hi Volt Power	Z-2040	\$1.95	\$1.70
BF469	Si NPN Power	Z-1635	\$1.95	\$1.70
BF470	Si PNP Power	Z-1636	\$2.45	\$2.10
BFR91	Si NPN UHF Signal	Z-1691	\$9.95	\$8.95
BUX80	Si NPN Hi Volt Power	Z-2150	\$2.25	\$1.90
MJE340	Si NPN Power	Z-2010	\$2.95	\$2.50
MJE350	Si PNP Power	Z-2012	\$5.95	\$5.35
MJ2955	Si PNP Power	Z-1800	\$2.95	\$2.50
MJE2955T	Si PNP Power	Z-2005	\$2.95	\$2.50
MJE3055T	Si NPN Power	Z-2008	\$9.95	\$8.45
MJ10012	Si NPN Pwr Darlington	Z-1805	\$9.95	\$8.45
MJ15003	Si NPN Power	Z-1808	\$9.95	\$8.45
MJ15004	Si PNP Power	Z-1810	\$19.95	\$16.95
MRF660	Si NPN UHF Power	Z-2508	\$0.25	\$0.20
PN100	Si NPN Signal	Z-1000	\$0.25	\$0.20
PN200	Si PNP Signal	Z-2000	\$0.85	\$0.75
PN3563	Si NPN Signal	Z-2180	\$1.25	\$1.05
PN4258	Si PNP Signal	Z-2326	\$2.35	\$2.00
TIP31B/C	Si NPN Power	Z-2020	\$8.95	\$7.60
TIP32B/C	Si PNP Power	Z-2024	\$8.95	\$7.60
TIP142	Si NPN Pwr Darlington	Z-2026	\$1.15	\$0.95
TIP147	Si PNP Pwr Darlington	Z-2028	\$1.15	\$0.95
2N2222	Si NPN Signal	Z-2069	\$2.15	\$1.85
2N3019	Si NPN Signal	Z-2068	\$1.95	\$1.70
2N3053	Si NPN Power	Z-2130	\$3.25	\$2.75
2N3055	Si NPN Power	Z-1804	\$9.95	\$8.45
2N3771	Si NPN Power	Z-1910	\$0.65	\$0.55
2N3904	Si NPN Signal	Z-2070	\$7.95	\$6.95
2N3948	Si NPN RF Power	Z-2260	\$3.95	\$3.35
2N4427	Si NPN RF Power	Z-2506	\$0.95	\$0.80
2N5401	Si PNP Hi Volt Switch	Z-1900	\$1.95	\$1.75
2SC710	Si NPN HF Signal	Z-2512	\$1.95	\$1.75
2SC1674	Si NPN UHF Signal	Z-6005	\$1.95	\$1.75
2SC1969	Si NPN HF Power	Z-2502	\$8.95	\$7.95
2SC2166	Si NPN HF Power	Z-2501	\$9.95	\$8.95
2SC2694	Si NPN VHF Power	Z-2505	\$99.95	\$84.95
2SC3355	Si NPN SHF Signal	Z-6006	\$2.95	\$2.50
2SC3358	Si NPN SHF Signal	Z-6007	\$3.95	\$3.35



# Semiconductors

## Signal Diodes

			Price Each	10 Up
75V 200mA Silicon	1N914A, 1N4148 etc.	Z-3120	<b>\$0.10</b>	<b>\$0.08</b>
75V 200mA Silicon	BAW62	Z-3245	<b>\$0.20</b>	<b>\$0.17</b>
25V 110mA Gold Bonded Germanium	OA47	Z-3232	<b>\$2.95</b>	<b>\$2.51</b>
40V 50mA Point Contact				
Signal Detector, Germanium	1N60/1K60	Z-3040	<b>\$0.40</b>	<b>\$0.35</b>
Shottky Hot Carrier	5082-2800 etc.	Z-3230	<b>\$2.95</b>	<b>\$2.36</b>
Silicon Vari-Cap.	BB212	Z-3125	<b>\$5.95</b>	<b>\$5.05</b>

## Rectifiers

			Price Each	10 Up
1A 400V Diode	1N4004 etc.	Z-3204	<b>\$0.15</b>	<b>\$0.12</b>
1A 1000V Diode	1N4007 etc.	Z-3207	<b>\$0.20</b>	<b>\$0.16</b>
3A 400V Diode	1N5404 etc.	Z-3222	<b>\$0.35</b>	<b>\$0.30</b>
3A 1000V Diode	1N5408 etc.	Z-3228	<b>\$0.50</b>	<b>\$0.40</b>
6A 1000V Diode	PX1006 etc.	Z-3229	<b>\$1.95</b>	<b>\$1.70</b>
10A 300V Stud-mount Diode	BYX98/300 etc.	Z-3242	<b>\$6.95</b>	<b>\$5.90</b>
1A 400V 200ns Fast Diode	1N4936 etc.	Z-3208	<b>\$0.95</b>	<b>\$0.80</b>
7A 400V 450ns Fast Diode	BY229/400	Z-3241	<b>\$5.95</b>	<b>\$4.95</b>
1.5A 400V Bridge	WO-4 etc.	Z-3304	<b>\$1.95</b>	<b>\$1.70</b>
6A 400V Bridge	PO-4 etc.	Z-3306	<b>\$3.95</b>	<b>\$3.35</b>
35A 400V Bridge		Z-3336	<b>\$9.95</b>	<b>\$8.46</b>

## Zener Diodes

400mW Types	Price Each	10 Up		1W Types	Price Each	10 Up
3.3V 1N746	<b>\$0.25</b>	<b>\$0.20</b>	Z-3401	1N4728	Z-3515	<b>\$0.35</b>
3.9V				1N4730	Z-3519	<b>\$0.35</b>
4.7V 1N750	<b>\$0.25</b>	<b>\$0.20</b>	Z-3403	1N4732	Z-3523	<b>\$0.35</b>
5.1V 1N751	<b>\$0.25</b>	<b>\$0.20</b>	Z-3405	1N4733	Z-3525	<b>\$0.35</b>
5.6V 1N752	<b>\$0.25</b>	<b>\$0.20</b>	Z-3407	1N4734	Z-3527	<b>\$0.35</b>
6.2V 1N753	<b>\$0.25</b>	<b>\$0.20</b>	Z-3409	1N4735	Z-3529	<b>\$0.35</b>
6.8V 1N957	<b>\$0.25</b>	<b>\$0.20</b>	Z-3411	1N4736	Z-3531	<b>\$0.35</b>
7.5V				1N4737	Z-3533	<b>\$0.35</b>
8.2V				1N4738	Z-3535	<b>\$0.35</b>
9.1V				1N4739	Z-3537	<b>\$0.35</b>
10V 1N961	<b>\$0.25</b>	<b>\$0.20</b>	Z-3413	1N4740	Z-3539	<b>\$0.35</b>
12V 1N963	<b>\$0.25</b>	<b>\$0.20</b>	Z-3415	1N4742	Z-3543	<b>\$0.35</b>
15V 1N965	<b>\$0.25</b>	<b>\$0.20</b>	Z-3417	1N4744	Z-3547	<b>\$0.35</b>
16V				1N4745	Z-3549	<b>\$0.35</b>
18V				1N4746	Z-3551	<b>\$0.35</b>
20V				1N4747	Z-3553	<b>\$0.35</b>
24V				1N4749	Z-3557	<b>\$0.35</b>
30V				1N4751	Z-3561	<b>\$0.35</b>
33V				1N4752	Z-3563	<b>\$0.35</b>

## Other Linear Devices

		Pin	Price No.	10 Up Each
LM334Z	Adjustable Current Source 1uA-10mA TO-92	3	Z-6810	<b>\$4.95</b>
LM335H	Precision Temperature Sensor TO-46	3	Z-6050	<b>\$5.95</b>
LM335Z	Precision Temperature Sensor TO-92	3	Z-6051	<b>\$4.95</b>
LM336Z	2.5V Adjustable Reference TO-46	3	Z-6055	<b>\$2.95</b>
LM394	2 Supermatched NPN Transistors	8	Z-6083	<b>\$12.95</b>
NE567	PLL type Tone Detector	8	Z-6167	<b>\$2.95</b>
NE572	Stereo Audio Compressor/Expander	16	Z-2605	<b>\$9.95</b>
DAC0800	8-bit D-A Converter	16	Z-6834	<b>\$7.95</b>
ADC0802	8-bit A-D Converter	20	Z-6833	<b>\$19.95</b>
uPC1373H	Receiver-Preamplifier for IR Diodes, SIP	8	Z-6106	<b>\$4.95</b>
XR2206	Waveform/Function Generator	16	Z-6820	<b>\$19.95</b>
XR2211	PLL / FSK Decoder	14	Z-2511	<b>\$12.95</b>
LM2917N	Frequency to Voltage Converter	14	Z-6112	<b>\$4.95</b>
LM3046	5 Monolithic NPN Transistor Array	14	Z-6107	<b>\$3.95</b>
TL3101	Versatile TRIAC Controller	18	Z-6150	<b>\$16.95</b>
LM3909	LED Driver / Flasher / Oscillator	8	Z-6109	<b>\$4.65</b>
LM3914	LED Dot/Bar Linear Display Driver	18	Z-6295	<b>\$6.95</b>
LM3915	LED Dot/Bar Logarithmic Display Driver	18	Z-6297	<b>\$6.95</b>
LB1412	12 Dot LED Driver with Peak Hold	22	Z-6291	<b>\$16.95</b>
uA78S40	Switchmode Power Supply Controller	16	Z-6840	<b>\$6.95</b>

## Comparators

		Pin No.	Price Each	10 Up Each
LM 311	General Purpose Single	8	Z-6048	<b>\$1.65</b>
LM 319	High Speed Dual	14	Z-6049	<b>\$4.95</b>
LM 339	Ultra Low Power Quad	14	Z-6039	<b>\$1.25</b>

## IC Power Amplifiers

			Pin No.	Price Each	10 Up Each
LM 380N	2.5W - 5W Audio Amp	14	Z-6080	<b>\$3.95</b>	<b>\$3.35</b>
LM 383T	7W Audio Amp TO-220	5	Z-6085	<b>\$9.95</b>	<b>\$8.95</b>
LM 386N	0.3W - 1W Low Voltage Amp	5	Z-6080	<b>\$1.95</b>	<b>\$1.70</b>
LM 1875T	20W Low Distortion Amp TO-220	5	Z-6115	<b>\$13.95</b>	<b>\$11.85</b>
TDA 1514A	50W HiFi power Amp SOT131	9	Z-6117	<b>\$19.95</b>	<b>\$17.00</b>

## Timers

			Pin No.	Price Each	10 Up Each
NE555/LM 555 CN	Single 555	8	Z-6145	<b>\$0.85</b>	<b>\$0.70</b>
TL555CP/ICM7555	Single 555 CMOS	8	Z-6144	<b>\$1.95</b>	<b>\$1.70</b>
NE556/LM 556 CN	Dual 555	14	Z-6146	<b>\$1.55</b>	<b>\$1.30</b>

## Radio/TV/RF

			Pin No.	Price Each	10 Up Each
OM350	Wideband Hybrid Amp 18dB 860MHz SIP	5	Z-6185	<b>\$26.95</b>	<b>\$24.75</b>
ZN414	AM Radio Receiver, TO-92	3	Z-6520	<b>\$3.95</b>	<b>\$3.36</b>
MK 484	AM Radio Receiver, TO92	3	Z-6525	<b>\$3.95</b>	<b>\$3.36</b>
LM3361A	Narrow Band FM IF Limiter/Demodulator	16	Z-2610	<b>\$3.95</b>	<b>\$3.35</b>
MC1377	PAL/NTSC Colour Encoder	20	Z-6530	<b>\$11.95</b>	<b>\$10.15</b>
BA1404	FM Stereo Transmitter	18	Z-6019	<b>\$16.95</b>	<b>\$15.95</b>
BA1404F	FM Stereo Transmitter Mini-Flat Pack	SMD	Z-6020	<b>\$9.95</b>	<b>\$8.95</b>
uPC1651	Wideband Low-noise Amp 20dB 1GHz, 4 MX	4	Z-6008	<b>\$3.95</b>	<b>\$3.35</b>
MC10116E	Triple VHF ECL Differential Amp	16	Z-5415	<b>\$3.95</b>	<b>\$3.35</b>
MC13020PCQUAM	AM-Stereo Decoder	20	Z-5420	<b>\$9.95</b>	<b>\$8.95</b>

## IC Voltage Regulators

				Pin No.	Price Each	10 Up Each
LM304	0V to -40V	25mA	10-pin CAN	Z-6546	<b>\$9.95</b>	<b>\$8.95</b>
LM317K	+1.2V to +37V	1.5A	TO-3	Z-6542	<b>\$9.95</b>	<b>\$8.95</b>
LM317T	+1.2V to +37V	1.5A	TO-220	Z-6541	<b>\$2.95</b>	<b>\$2.50</b>
LM337T	-1.2V to -37V	1.5A	TO-220	Z-6058	<b>\$3.95</b>	<b>\$3.35</b>
LM350K	+1.2V to +32V	3A	TO-3	Z-6560	<b>\$13.95</b>	<b>\$11.95</b>
LM350T	+1.2V to +32V	3A	TO-220	Z-6561	<b>\$9.95</b>	<b>\$8.95</b>
LM723	+2.0V to +37V	150mA	14-Pin DIL	Z-6362	<b>\$1.95</b>	<b>\$1.70</b>
78L05Z	+5V	100mA	TO-92	Z-6108	<b>\$1.35</b>	<b>\$1.15</b>
78M05	+5V	500mA	TO-220	Z-6543	<b>.95</b>	<b>.75</b>
7805K	+5V	1A	TO-3	Z-6563	<b>\$3.95</b>	<b>\$3.35</b>
7805T	+5V	1A	TO-220	Z-6545	<b>\$1.35</b>	<b>\$1.15</b>
7808T	+8V	1A	TO-220	Z-6553	<b>\$1.35</b>	<b>\$1.15</b>
78L12Z	+12V	100mA	TO-92	Z-6110	<b>\$1.35</b>	<b>\$1.15</b>
7812K	+12V	1A	TO-3	Z-6564	<b>\$3.95</b>	<b>\$3.35</b>
7812T	+12V	1A	TO-220	Z-6552	<b>\$1.35</b>	<b>\$1.15</b>
78L15Z	+15V	100mA	TO-92	Z-6111	<b>\$1.45</b>	<b>\$1.20</b>
7815K	+15V	1A	TO-3	Z-6565	<b>\$3.95</b>	<b>\$3.35</b>
7815T	+15V	1A	TO-220	Z-6554	<b>\$1.35</b>	<b>\$1.15</b>
7905T	-5V	1A	TO-220	Z-6555	<b>\$1.35</b>	<b>\$1.15</b>
7905K	-5V	1A	TO-3	Z-6566	<b>\$3.95</b>	<b>\$3.35</b>
7912T	-12V	1A	TO-220	Z-6556	<b>\$1.35</b>	<b>\$1.15</b>
7915T	-15V	1A	TO-220	Z-6557	<b>\$1.35</b>	<b>\$1.15</b>

## Unijunctions / Diacs

			Pin No.	Price Each	10 Up Each
Standard Unijunction	2N2646 etc	Z-1786		<b>\$4.95</b>	<b>\$4.25</b>
Programmable Unijunction	2N6027/D13T1	Z-1780		<b>\$1.65</b>	<b>\$1.40</b>
Diac	BR100 etc	Z-4710		<b>\$0.95</b>	<b>\$0.80</b>

## SCRs and Triacs

				Price Each	10 Up Each
0.8A	200V	TO92	Sensitive Gate SCR	<b>\$2.95</b>	<b>\$2.50</b>
4A	30V	TO202	Sensitive Gate SCR	<b>\$2.35</b>	<b>\$2.00</b>
4A	400V	TO202	Sensitive Gate SCR	<b>\$2.65</b>	<b>\$2.25</b>
8A	500V	TO220	SCR	<b>\$3.95</b>	<b>\$3.35</b>
20A	400V	Stud Mount	SCR	<b>\$12.95</b>	<b>\$11.00</b>
6A	400V	TO220	TRIAC	<b>\$3.95</b>	<b>\$3.35</b>
10A	600V	TO220	Isolated Tab TRIAC	<b>\$5.95</b>	<b>\$4.95</b>
15A	400V	TO220	TRIAC	<b>\$5.95</b>	<b>\$4.95</b>

			Price Each	10 Up Each
PO103	—, C103B, TS0820-20, etc	Z-4310	<b>\$2.95</b>	<b>\$2.50</b>
C106Y etc		Z-4315	<b>\$2.35</b>	<b>\$2.00</b>
C106D, TYN404, etc		Z-4320	<b>\$2.65</b>	<b>\$2.25</b>
C122E etc		Z-4332	<b>\$3.95</b>	<b>\$3.35</b>
SPS420, C220OD		Z-4314	<b>\$12.95</b>	<b>\$11.00</b>
SC141D, BTB06-400BW, etc		Z-4510	<b>\$3.95</b>	<b>\$3.35</b>
BTA10-600B, T1013MJ, etc		Z-4515	<b>\$5.95</b>	<b>\$4.95</b>
SC151D, BTB16-400BW, etc		Z-4520	<b>\$5.95</b>	<b>\$4.95</b>

\* Note: Various Manufacturers' Codes may differ from Each Other





## 74 Series TTL (supply = +5V)

		Pins	Price Each	10 Up Each
7490	Decade Counter	14 Z-5210	\$1.75	\$1.45
74121	Monostable, Schmitt Input	14 Z-5260	\$1.95	\$1.70
74123	Retriggerable Monostable	16 Z-5263	\$0.95	\$0.76

74LS Series Low Power Schottky  
(Supply = +5V)

74LS00	Quad 2-input NAND	14 Z-4900	\$0.95	\$0.80
74LS01	Quad 2-input NAND, O.C. output	14 Z-4901	\$0.95	\$0.80
74LS02	Quad 2-input NOR	14 Z-4902	\$0.95	\$0.80
74LS04	Hex Inverter	14 Z-4904	\$0.95	\$0.80
74LS05	Hex Inverter, O.C. output	14 Z-4905	\$0.95	\$0.80
74LS08	Quad 2-input AND	14 Z-4908	\$0.95	\$0.80
74LS10	Triple 3-input NAND	14 Z-4910	\$0.95	\$0.80
74LS11	Triple 3-input AND	14 Z-4912	\$0.95	\$0.80
74LS13	Dual 4-input NAND Schmitt	14 Z-4913	\$0.95	\$0.80
74LS14	Hex Schmitt Inverter	14 Z-4914	\$1.35	\$1.15
74LS20	Dual 4-input NAND	14 Z-4920	\$0.95	\$0.80
74LS21	Dual 4-input AND	14 Z-4924	\$1.65	\$1.40
74LS27	Triple 3-input NOR	14 Z-4927	\$0.95	\$0.80
74LS30	8-input NAND	14 Z-4930	\$1.05	\$0.90
74LS31	6 Delay Elements, 6nS 20nS 40nS	16 Z-4931	\$3.95	\$3.35
74LS32	Quad 2-input NOR	14 Z-4932	\$0.95	\$0.70
74LS37	Quad 2-input NAND buffered	14 Z-4937	\$0.95	\$0.70
74LS47	BCD to 7-Segment Display Driver	16 Z-4947	\$1.95	\$1.70
74LS54	4-input AND/OR/INVERT gate	14 Z-4954	\$0.95	\$0.70
74LS73	Dual J/K Flip Flop -ve Edge Triggered	14 Z-4973	\$1.35	\$1.15
74LS74	Dual D Flip Flop +ve Edge Triggered	14 Z-4974	\$1.25	\$1.05
74LS75	4-bit Bistable Latch	16 Z-4975	\$1.65	\$1.40
74LS83	4-bit Binary Adders with Fast Carry	16 Z-4983	\$2.35	\$2.00
74LS85	4-bit Magnitude Comparator	16 Z-4985	\$1.95	\$1.65
74LS86	Quad 2-input Exclusive OR Gate	14 Z-4986	\$1.35	\$1.15
74LS90	Decade Counter	14 Z-4990	\$1.95	\$1.70
74LS95	4-bit Parallel Access Shift Register	14 Z-4995	\$1.95	\$1.70
74LS109	Dual J/K Flip Flop +ve Edge Triggered	16 Z-5109	\$1.65	\$1.40
74LS123	Retriggerable Monostable Multivibrator	16 Z-5310	\$1.85	\$1.55
74LS132	Quad 2-input NAND Schmitt Trigger	14 Z-5283	\$1.95	\$1.70
74LS138	3 Line to 8 Decoder/Demultiplexer	16 Z-5284	\$1.95	\$1.70
74LS139	Dual 2 to 4 Decoder/Demultiplexer	16 Z-5285	\$1.65	\$1.40
74LS153	Dual 1 of 4 Multiplexer	16 Z-5286	\$1.45	\$1.20
74LS157	Quad 2 to 1 Multiplexer	16 Z-5287	\$1.95	\$1.70
74LS165	8-bit Parallel to Serial Shift Regis.	16 Z-5288	\$2.65	\$2.25
74LS174	Hex D Flip Flop with Clear	16 Z-5290	\$1.65	\$1.40
74LS175	Quad D Flip Flop with Clear	16 Z-5291	\$1.65	\$1.40
74LS190	Up/Down Decade Counter	16 Z-4999	\$2.35	\$2.15
74LS191	4-bit Up/Down Binary Counter	16 Z-5191	\$1.95	\$1.70
74LS192	BCD U/D Counter 2-Clocks	16 Z-5192	\$1.95	\$1.70
74LS193	4-bit U/D Binary Counter 2-Clocks	16 Z-5193	\$2.35	\$2.00
74LS196	Presettable Bin/Dec Counter	14 Z-5196	\$2.95	\$2.50
74LS221	Dual Monostable M/Vib. Schmitt Input	16 Z-5296	\$2.95	\$2.50
74LS240	Octal 3-state Inverting Buffer	20 Z-5298	\$2.65	\$2.25
74LS241	Octal 3-state Buffer/Line Driver	20 Z-5293	\$2.95	\$2.50
74LS244	Octal 3-state Buffer/Line Driver	20 Z-5294	\$2.95	\$2.50
74LS245	Octal 3-state 2-way Buffer	20 Z-5299	\$2.95	\$2.50
74LS367	Hex 3-state Buffer	16 Z-5292	\$1.65	\$1.40
74LS373	Octal 3-state D-type Latch	20 Z-5295	\$2.65	\$2.25
74LS374	Octal 3-state Flip Flop +ve Edge Trig.	20 Z-5297	\$2.65	\$2.25

74C Series CMOS  
(Supply = +3V to +15V)

		Pins	Price Each	10 Up Each
74C00	Quad 2-input NAND	14 Z-5410	\$1.25	\$1.05
74C14	Hex Schmitt Inverter	14 Z-5413	\$1.35	\$1.15
74C926	4-digit Counter with 7-seg Driver	18 Z-5414	\$19.95	\$17.55

74HC Series High-speed CMOS  
(Supply = +2V to +6V)

74HC00	Quad 2-input NAND	14 Z-5800	\$1.05	\$0.90
74HC02	Quad 2-input NOR	14 Z-5802	\$0.95	\$0.75
74HC04	Hex Inverter	14 Z-5804	\$0.95	\$0.75
74HC08	Quad 2-input AND	14 Z-5808	\$0.95	\$0.75
74HC10	Triple 3-input NAND	14 Z-5810	\$0.95	\$0.75
74HC11	Triple 3-input AND	14 Z-5811	\$0.95	\$0.75
74HC14	Hex Schmitt Trigger	14 Z-5814	\$1.25	\$1.05
74HC27	Triple 3-input NOR	14 Z-5827	\$0.95	\$0.75
74HC30	8-input NAND	14 Z-5830	\$0.95	\$0.75
74HC32	Quad 2-input OR	14 Z-5832	\$0.95	\$0.75
74HC36	Quad 2-input NOR	14 Z-5836	\$0.95	\$0.75
74HC74	Dual D Flip Flop, +ve Edge Triggered	14 Z-5874	\$0.95	\$0.75
74HC76	Dual J/K Flip Flop, -ve Edge Triggered	16 Z-5876	\$1.65	\$1.40
74HC85	4-bit Magnitude Comparator	16 Z-5885	\$2.65	\$2.25
74HC86	Quad 2-input Exclusive OR Gates	14 Z-5886	\$1.35	\$1.15
74HC123	Dual Retriggerable Monostable	16 Z-5910	\$2.95	\$2.50
74HC132	Quad 2 Input NAND	14 Z-5912	\$2.95	\$2.50
74HC138	3 to 8 Decoder	16 Z-5915	\$1.75	\$1.45
74HC139	Dual 2 to 4 Decoder/Demultiplexer	16 Z-5920	\$1.45	\$1.25
74HC154	4 to 16 Decoder/Demultiplexer	24 Z-5924	\$3.95	\$3.35

74HC157	Quad 2 to 1 Multiplexer	16 Z-5925	\$1.95	\$1.70
74HC161	Presettable 4-bit Binary Counter	16 Z-5929	\$1.95	\$1.70
74HC165	8-bit Parallel to Serial Shift	16 Z-5930	\$2.95	\$2.50
74HC174	Hex D Flip Flop with Clear	16 Z-5935	\$1.95	\$1.70
74HC193	4-bit U/D Binary Counter, 2-Clocks	16 Z-5939	\$2.95	\$2.50
74HC221	Dual Monostable Schmitt Input	16 Z-5940	\$3.95	\$3.35
74HC240	Octal 3-state Inverting Buffer	20 Z-5945	\$1.95	\$1.70
74HC244	Octal 3-state Buffer/Line Driver	20 Z-5950	\$2.65	\$2.25
74HC245	Octal 3-state 2-way Buffer	20 Z-5955	\$2.95	\$2.50
74HC367	Hex 3-state Buffer	16 Z-5960	\$2.65	\$2.25
74HC373	Octal 3-state D-type Latch	20 Z-5965	\$2.65	\$2.25
74HC393	Dual 4-Bit Binary Counter	14 Z-5974	\$2.95	\$2.50
74HC4066	Quad Analog Switch	14 Z-5990	\$1.95	\$1.70

4000 Series CMOS Logic  
(Supply = +3V to +15V)

		Pins	Price Each	10 Up Each
4001	Quad 2-input NOR	14 Z-5601	\$0.95	\$0.80
4002	Dual 4-input NOR	14 Z-5602	\$0.95	\$0.80
4007	Dual Complementary Pair & inverter	14 Z-5607	\$0.95	\$0.80
4009	Hex Inverting Buffer	16 Z-5609	\$1.45	\$1.20
4011	Quad 2-input NAND	14 Z-5611	\$0.95	\$0.75
4012	Dual 4-input NAND	14 Z-5612	\$0.95	\$0.75
4013	Dual D Edge Triggered Flip Flop	14 Z-5613	\$1.35	\$1.15
4015	Dual 4-bit Shift Register	16 Z-5615	\$1.95	\$1.70
4016	Quad Bi-Lateral Switch	14 Z-5616	\$1.95	\$1.70
4017	5 Stage Decade Counter/Divider	16 Z-5617	\$1.95	\$1.70
4019	Quad 2-input Multiplexer	16 Z-5619	\$1.95	\$1.70
4020	14-stage Binary Ripple Counter	16 Z-5620	\$1.95	\$1.70
4022	1 of 8 Counter	16 Z-5622	\$1.95	\$1.70
4023	Triple 3-input NAND	14 Z-5623	\$1.25	\$1.05
4024	7-bit Binary Ripple Counter	14 Z-5624	\$1.65	\$1.40
4025	Triple 3-input NOR	14 Z-5625	\$0.95	\$0.70
4026	Decade-counter, 7-seg Output Driver	16 Z-5626	\$3.95	\$3.35
4027	Dual J/K Flip Flop	16 Z-5627	\$1.35	\$1.15
4028	4-bit BCD to 1-of-10 Decoder	16 Z-5628	\$1.95	\$1.70
4029	4-bit Bin/BCD U/D Parallel-In Counter	16 Z-5629	\$2.65	\$2.25
4030	Quad Exclusive OR Gate	14 Z-5630	\$0.95	\$0.70
4040	12-stage Binary Ripple Counter	16 Z-5640	\$1.95	\$1.70
4044	Quad R/S Latch, O.C. output	16 Z-5644	\$1.95	\$1.70
4046	Phase Locked Loop	16 Z-5646	\$2.35	\$2.00
4047	Mono/Astable Multivibrator	14 Z-5647	\$2.65	\$2.25
4049	Hex Inverting Buffer	16 Z-5649	\$1.35	\$1.15
4050	Hex Non-Inverting Buffer	16 Z-5650	\$1.25	\$1.05
4051	8-channel Analog Switch	16 Z-5651	\$1.95	\$1.70
4066	Quad Bilateral Analog Switch	14 Z-5666	\$1.25	\$1.05
4069	Hex Inverter	14 Z-5669	\$0.95	\$0.70
4071	Quad 2-input OR	14 Z-5671	\$0.95	\$0.70
4081	Quad 2-input Buffered AND	14 Z-5681	\$0.95	\$0.70
4082	Dual 4-input AND	14 Z-5682	\$0.95	\$0.70
4093	Quad 2-input NAND Schmitt Trigger	14 Z-5693	\$1.95	\$1.70
4511	BCD to 7-segment Latch Decoder Driver	16 Z-5730	\$2.95	\$2.50
4516	Dual 4-input AND	16 Z-5738	\$2.95	\$2.50
4518	Dual BCD Up-Counter	16 Z-5740	\$2.95	\$2.50
4520	Dual Binary Up-Counter	16 Z-5742	\$2.95	\$2.50
4526	Binary Divide-by-N Counter	16 Z-5744	\$2.65	\$2.25
4528	Dual Monostable Multivibrator	16 Z-5748	\$1.95	\$1.70
40106	Hex Inverting Schmitt Trigger	14 Z-5696	\$1.95	\$1.56
40175	Quad D Flipflop	16 Z-5695	\$1.95	\$1.70
40194	4-bit Bi-Directional Shift Register	16 Z-5694	\$2.95	\$2.50



## Operational Amplifiers (OP-AMPS)

		Pins	Price Each	10 Up Each
LM 10CLN	Low Voltage Comp. with reference	8 Z-6084	\$6.95	\$5.95
OP 27	Precision Low Noise Compensated	8 Z-6022	\$9.95	\$8.95
TL 071	G.P. JFET/Bipolar Compensated	8 Z-6030	\$2.95	\$2.50
TL 072	Dual G.P. JFET/Bipolar Compensated	8 Z-6032	\$3.95	\$3.45
TL 074	Quad G.P. JFET/Bipolar Compensated	14 Z-6034	\$4.95	\$3.95
TLC 251	Low Voltage/Power CMOS Compensated	8 Z-6021	\$9.95	\$8.95
LM 301	General Purpose Uncompensated	14 Z-6040	\$1.95	\$1.70
LM 308	Precision Uncompensated	14 Z-6045	\$1.95	\$1.70
LM 324	Quad Low Power Compensated	14 Z-6102	\$1.35	\$1.15
LM 358	Dual Low Power Compensated	8 Z-6029	\$1.95	\$1.70
LM 382	Dual Stereo Low Noise Audio Preamp	8 Z-6082	\$4.95	\$3.95
LM 614	Quad G.P. Compensated with Adjustable Ref.	16 Z-6375	\$9.95	\$8.45
LM 741	General Purpose Compensated	8 Z-6382	\$0.95	\$0.80
LM 833	Dual Low Noise HiFi Audio Compensated	8 Z-6088	\$3.95	\$3.35
LM 1458	Dual General Purpose Compensated	8 Z-6028	\$1.95	\$1.70
CA 3080	Transconductance Single	8 Z-6024	\$4.95	\$4.25
CA 3130T	MOSFET/CMOS Uncompensated Single, TO8	8 Z-6025	\$9.95	\$8.95
CA 3130E	MOSFET/Bipolar Compensated DIP	8 Z-5417	\$3.95	\$3.35
CA 3140E	MOSFET/LM741 Pin Compatible	8 Z-5419	\$3.95	\$3.35
LM 3900	Quad Norton (Current Differencing)	14 Z-6100	\$1.95	\$1.65
NE 5534AP	Low Noise High Output Compensated	8 Z-6090	\$5.95	\$5.05
LM 13600N	Dual Transconductance with Buffers	16 Z-6113	\$4.95	\$4.25



## Premium Quality Light Emitting Diodes

3mm Round Premium Quality	Cat No.	Price	10 Up
Red	Z-4077	.40	.35
Green	Z-4079	.40	.35
Yellow	Z-4081	.40	.35
Orange	Z-4083	.40	.35

5mm Round Premium Quality	Cat No.	Price	10 Up
Red	Z-4085	.50	.40
Green	Z-4087	.50	.40
Yellow	Z-4089	.50	.40
Orange	Z-4091	.50	.40

7mm Round Premium Quality	Cat No.	Price	10 Up
Red	Z-4050	.60	.48
Green	Z-4051	.60	.48
Yellow	Z-4052	.60	.48



10mm Round Premium Quality	Cat No.	Price	10 Up
Red	Z-4060	.75	.60
Green	Z-4061	.75	.60
Yellow	Z-4062	.75	.60

5mm Round Special Types	Cat No.	Price	10 Up
Blue, 3V 30mA	Z-4005	\$3.25	\$2.95
Red, High Bright Flashing	Z-4040	\$1.95	\$1.65
Green, 1.5mcd Flashing	Z-4042	\$1.65	\$1.40
Red/Green 2-Colour	Z-4070	\$1.95	\$1.55
Red, 1000 mcd Clear Lens	Z-4072	\$1.95	\$1.65

2 x 5mm Rectangular Premium Quality	Cat No.	Price	10 Up
Red	Z-4093	.60	.50
Green	Z-4095	.60	.50
Yellow	Z-4097	.60	.50
Red/Green, 3 legs	Z-4099	.95	.85

## Seven Segment LED Displays

Digit Size/colour	Common Anode	Cat. No.	Price Each	5 Up
7.6mm Red	LT312	Z-4117	\$2.95	\$2.50
13.2mm Red	LTS546	Z-4145	\$3.95	\$3.50

Digit Size/Colour	Common Cathode	Cat. No.	Price Each	5 Up
7.6mm Red	LT313	Z-4103	\$2.95	\$2.50
12.7mm Red	FND560	Z-4150	\$3.95	\$3.50
13.2mm Orange	LTS5503AE	Z-4151	\$3.95	\$3.50



## Photo-Transistors/Diodes, LDRs etc

		Cat. No	Price Each	10 Up
Silicon Photo Darlington with lens	MEL12	Z-1952	<b>\$1.95</b>	<b>\$1.65</b>
Silicon Photo Diode	LTR53GA	Z-1956	<b>\$4.45</b>	<b>\$3.65</b>
Light Dependent Resistor	DSCD01	Z-4801	<b>\$2.05</b>	<b>\$1.70</b>

## Opto Isolators

		Pins	Cat. No	Price Each	10 Up
Opto Coupler LED/Photo Diode Standard	4N25/4N28	6	Z-4804	<b>\$1.95</b>	<b>\$1.60</b>
Opto Coupler Fast - MIDI Standard	6N138	6	Z-4808	<b>\$4.95</b>	<b>\$3.95</b>
Opto Coupler High Transfer Ratio	SFH60	6	Z-9023	<b>\$4.95</b>	<b>\$3.65</b>
Opto Triac Driver	MOC3021/ MCP3021	6	Z-4516	<b>\$3.95</b>	<b>\$2.95</b>

## Liquid Crystal Display

4.5 Digit 10mm Digit Size	Cat. No.	Price Each	5 Up
	Z-4175	\$17.95	\$15.20

Note: Various Manufacturers' Codes may differ from each other

## COMPONENT PACKS

### Over 60 pieces! Ceramics Pack

Quality 50V ceramic capacitors in a specially selected pack for maximum versatility. Ideal for service people, technicians, hobbyists, etc..

**\$6.95**

Cat R-7050  
10 pks or more \$4.86/pk

### 300 computer selected 1/4W Types Resistor Pack

60 values computer selected for maximum versatility. Quality 5% types..... huge savings on normal price!

**\$9.95**

Cat R-7010  
10 pks or more \$6.96/pk

### 55 Electrolytics Electrolytic Pack

55 quality single ended (PCB mounting) electrolytics. Range is from 2.2uF to 470uF. Voltages are from 10 to 25 volts. You're sure to find them invaluable for projects, etc.

**\$9.95**

Cat R-7030  
10 pks or more \$7.65/pk

### 50 in pack Premium 5mm Red LED Pack

For those who want bulk price savings but don't need 100!

**\$10**

Cat Z-3011  
5 pks or more \$8.95/pk

### 50 Piece Polyester Packs

	Cat. No.	Price	5 Up
A 0.001-0.022mFd	R-7041	\$7.95	\$6.75
B 0.0027-0.005mFd	R-7042	\$7.95	\$6.75
C 0.0068-0.015mFd	R-7043	\$7.95	\$6.75
D 0.018-0.039mFd	R-7044	\$7.95	\$6.75
E 0.047-0.1mFd	R-7045	\$7.95	\$6.75

### 60 Greencaps Greencap Pack

No rubbish values in this pack! All are as used in a number of circuits. Up to 100 volt and a wide selection of values. Perfect for the project builder.

**\$9.95**

Cat R-7040  
10 pks or more \$7.65

### 100 Pieces Signal Transistor Pack

Comprises 20 each of BC547, BC548, BC549, NPN types (equiv. BC107/8/9) fifteen BC557 & BC558 and ten BC559 PNP types. A perfect mix for the workshop.

**\$12.95**

Cat Z-3000  
10 pks or more \$10.95/pk

### 100 pieces Signal Diode Pack

A great selection of types as used in everything from crystal sets to computers. Contains twenty five OA95, five OA47 germanium diodes and seventy 1N914/1N4148 silicon diodes.

**\$19.95**

Cat Z-3005  
10 pks or more \$16.95/pk

### 100 in pack Premium 5mm Red LED Pack

These high quality red LED's are the standard 5mm size. There's a huge saving on buying single LED's... so it's the best way to buy!

**\$19.95**

Cat Z-4084  
5 pks or more \$17.85/pk

### 57 Diodes & SCR's Power Diode Pack

Over fifty of the most used diodes! You get.... 20 1N4004, 10 1N4007 1A diodes, 10 each of 1N5404 & 1N5408 3A diodes, two W04 1.5A 400V bridges, three C106Y1 and two C122E general purpose SCR's.

**\$22.95**

Cat Z-3010  
10 pks or more \$19.95/pk

### Premium Coloured LED's

100 high quality assorted colour LED's. They're standard 5mm in size and matched for colour and brightness. You get 60 red, 20 green, 10 yellow and 10 orange.

**\$24.95**

Cat Z-3015  
10 pks or more \$22.95/pk



### 50 piece Monolithic Capacitor Packs

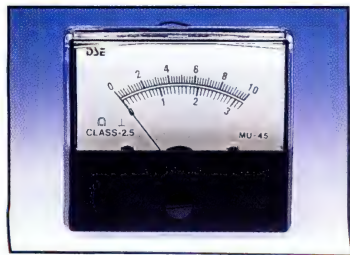
	Cat No.	Price	5 Up
A 0.01mFd	R-7060	\$11.95	\$8.95
B 0.1mFd	R-7062	\$13.95	\$9.99

### 1/4 Watt Carbon Film Resistor Packs

Piece	Cat No.	Price	5 Up
A 0-8.2 ohms	R-7100	\$3.95	\$2.95
B 10-82ohms	R-7102	\$3.95	\$2.95
C 100-820ohms	R-7104	\$3.95	\$2.95
D 1k-8.2k ohms	R-7106	\$3.95	\$2.95
E 10k-82k ohms	R-7108	\$3.95	\$2.95
F 100k-820k ohms	R-7110	\$3.95	\$2.95
G 1M-10M ohms	R-7112	\$3.95	\$2.95



# Panel Meters



## UNIVERSAL RANGE

Available in two sizes. These versatile universal 100uA panel meters can easily be adapted for almost any scale variation of volts, amps, ohms, etc. Combined with our 'Shunt Pack' & Meter Instrument Labels, the meters will operate over the range 100uA - 316mA & 1V - 100V.

### Small MU-45 Type

Dimensions:  
Scale area - 55 x 30mm  
Overall - 58 x 52mm  
Mounting hole - 45mm  
Bolt holes - 38mm centres  
x 3mm bore

Cat Q-2045 **\$17<sup>95</sup>**

### Large MU-65 Type

Dimensions:  
Scale area - 96 x 49mm  
Overall - 100 x 82mm  
Mounting hole - 66mm  
Bolt holes - 64mm x 80mm  
centres x 3mm bore

Cat Q-2065 **\$22<sup>95</sup>**

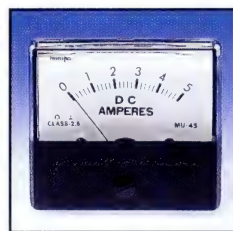
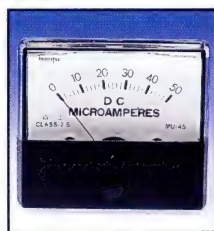
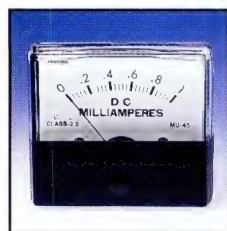
### Shunt Pack

Designed for the above panel meters, but handy for most meter conversions. Comes with shunt resistors from 1.1 to 1,000,000 ohms, resistance wire and instructions.

Cat Q-2046 **\$1<sup>95</sup>**

**Meter & Instrument Transfers? See page 155**

## STANDARD RANGE



### Standard MU-45 Type

MU-45 type meters already adapted to suit almost any requirement with shunts and multipliers. With full scale accuracy better than or equal to 2.5%. All have mechanical zero adjustment. Nuts and washers supplied.

#### 0-1mA

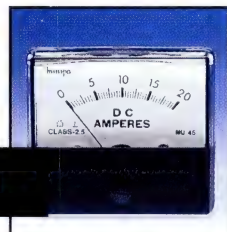
200 ohm internal resistance  
Cat Q-2010 **\$17<sup>95</sup>**

#### 0-50uA

3500 ohm internal resistance  
Cat Q-2020 **\$17<sup>95</sup>**

#### 0-5A

0.02 ohm internal resistance  
Cat Q-2030 **\$17<sup>95</sup>**



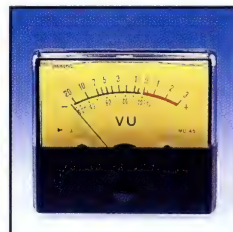
#### 0-20A

0.005 ohm internal resistance  
Cat Q-2035 **\$17<sup>95</sup>**



#### 0-20V

1k ohm/V internal resistance  
Cat Q-2040 **\$17<sup>95</sup>**



#### VU Meter

-20 +/- 3VU (1.228V/0dB)  
Cat Q-2050 **\$17<sup>95</sup>**

### MU-45 Type Dimensions

Scale area - 55 x 30mm  
Overall - 58 x 52mm  
Mounting hole - 45mm  
Bolt holes - 38mm centres x 3mm bore



## Standard MU-65 Types

In two scales - 100uA and 1mA, to suit larger style projects. Nuts and washers provided.

### 0-100uA

3500 ohm internal resistance  
Cat Q-2070 **\$22<sup>95</sup>**

### 0-1mA

200 ohm internal resistance  
Cat Q-2060 **\$22<sup>95</sup>**

### MU-65 Type Dimensions

Scale area - 96 x 49mm  
Overall - 100 x 82mm  
Mounting hole - 66mm diameter  
Bolt holes: 80 x 64mm x 3mm (diameter)



### Standard MU-52E

1-100uA (3750 ohms)  
Overall Size: 66 x 80mm  
Mounting Hole: 50mm diameter  
Bolt Holes: 64 x 48 x 3mm (diam.)  
Cat Q-2055 **\$20<sup>95</sup>**



### Level Meter

Particularly suitable for AM/FM tuner & receiver projects. Scale size: 34 x 17mm (same size cut-out required). Impedance 1k. Straw coloured meter face, looks great back-lit. Signal Strength - 250uA FSD

Cat Q-2100

**\$9<sup>95</sup>**

### 3.5 Digit LCD Panel Meter

'Full Scale' of 200mV or 2V (user selectable) and a high input impedance (100M ohms). It can also be self mounted...includes a mounting bezel. Comes with a comprehensive data sheet.

#### Features:

- Single supply rail (9V)
- Low supply current (2mA max)
- Auto zeroing and overrange inbuilt



• Meter size: 71 x 46 x 21mm

Cat Q-2200

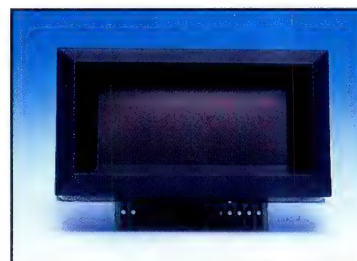
**\$59<sup>95</sup>**

### 3.5 Digit LED Panel Meter

Incorporates a dual-slope analogue-to-digital converter and a 100mV reference with 200mV or 2V full scale sensitivity. 12.7mm digit height. Auto zeroing and over ranging are provided and automatic input polarity indication is available. Full instructions supplied.

#### Features:

- Single +5V operation
- Decimal point selectable
- Zero reading from 0V on all scales
- Input impedance > 100M ohms



• Self mountable (includes mounting bezel)

Cat Q-2210

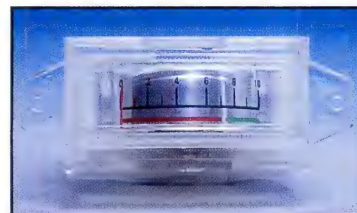
**\$59<sup>95</sup>**

### Edge Level Meter

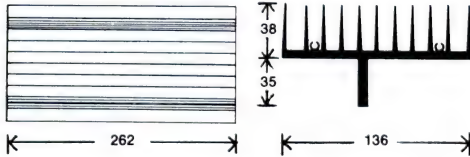
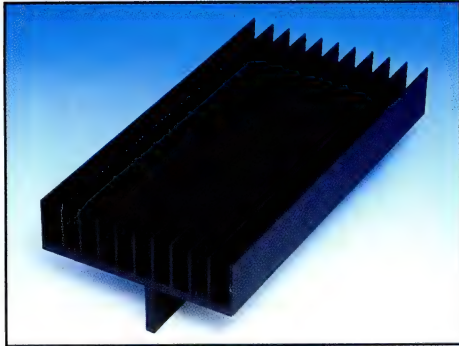
As used in many cassettes & amplifiers, etc. Graduated 1 to 10 with 'battery check' strip under the main scale. Scale size 32 x 10mm. Mounts with 2 screws, hole centres 49mm. 500uA FSD - 450 ohm internal resistance.

Cat Q-2110

**\$9<sup>95</sup>**





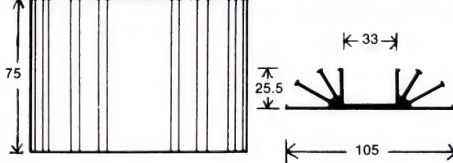
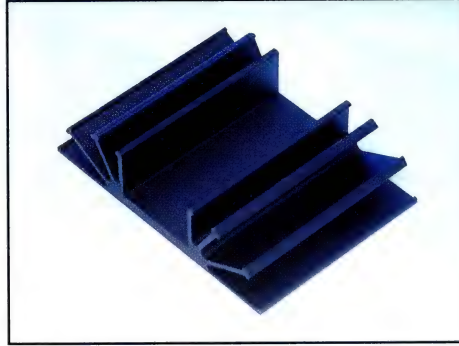


## Square Finned High Power

Ideal for big amplifiers, monster power supplies, etc. With power transistor mounting flange and extra thick base.

Thermal Resistance: Fins Horizontal -  $0.76^{\circ}\text{C/W}$   
Fins Vertical -  $0.6^{\circ}\text{C/W}$

**\$39<sup>95</sup>**  
Cat H-3472

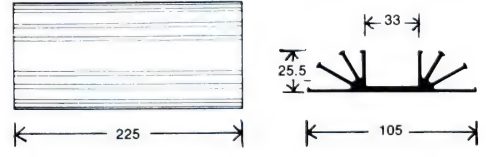


## High Efficiency Heatsink

With black anodised finish, extra thick base and radial fins for maximum heat dissipation.

Thermal Resistance:  $2.5^{\circ}\text{C/W}$

**\$9<sup>95</sup>**  
Cat H-3422

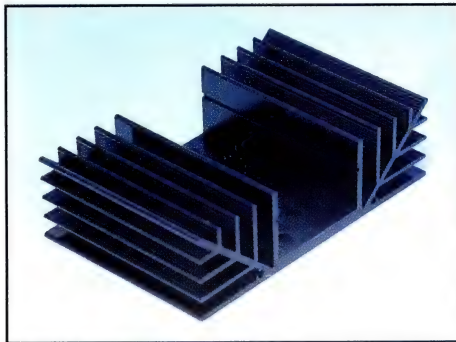


## Extra Heavy Duty Powerfin Heatsink

Ideal for those large projects where a lot of heat needs to be dissipated. It's the same as H-3422 (left) but three times as long.

Thermal Resistance: Fins Horizontal -  $1.2^{\circ}\text{C/W}$   
Fins Vertical -  $1.0^{\circ}\text{C/W}$

**\$18<sup>95</sup>**  
Cat H-3426

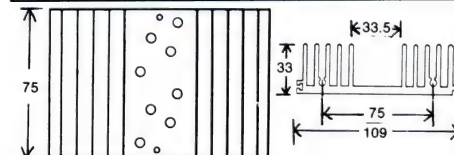
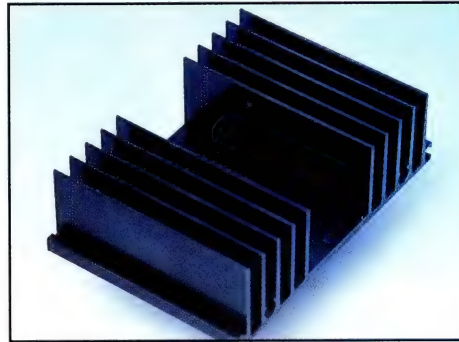


## Radial Fin Power Heatsink

The efficient design of this heatsink makes it ideal for efficient heat dissipation over a small area. It accepts two power transistors of the TO-3 variety.

Thermal Resistance:  $1.9^{\circ}\text{C/W}$

**\$9<sup>95</sup>**  
Cat H-3485

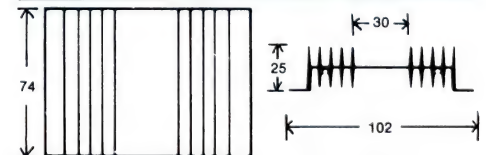
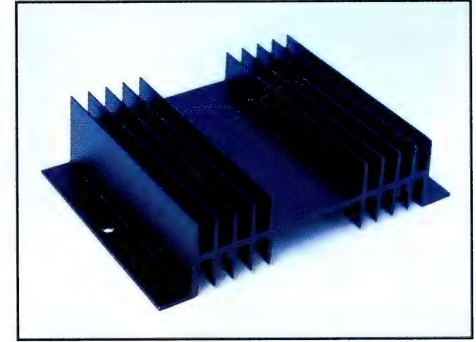


## Versatile Power Heatsink

The ingenious design of this heatsink makes it possible to mount it either flat against a panel, or at right angles to it. The end fins have tongue and groove couplings so that two or more heatsinks can be joined sideways. The drilled version takes 2 x TO-3's.

Thermal Resistance (drilled & undrilled):  $2.0^{\circ}\text{C/W}$

Undrilled - Cat H-3460 **\$6<sup>95</sup>**  
Pre-drilled - Cat H-3461



## Economy Power Heatsink

Available either undrilled or pre-drilled to suit the most common power transistors (TO-3, TO-26, TO-220, etc).

Thermal Resistance (drilled & undrilled):  $2.8^{\circ}\text{C/W}$

Undrilled - Cat H-3470 **\$5<sup>95</sup>**  
Pre-drilled - Cat H-3471

ALL MEASUREMENTS ARE IN MILLIMETRES

## Rotary Cooling Fans

These rotary fans are perfect for new projects or as replacements in equipment which requires forced air cooling. They are quiet, include chrome finger guard and are easy to mount.

Large - 120mm x 40mm

Rated: 240V AC @ 0.12A  
Operating Voltage Range: 185-245V AC  
Speed: 2600 RPM  
Air Delivery: 80  $\text{Ft}^3/\text{min.}$   
Noise Level (Max): 42dB (A)

Cat Y-8500

Small - 80mm x 25mm.

Rated: 240V AC @ 0.1A

Cat Y-8505

**\$32<sup>95</sup> ea**



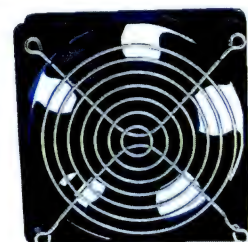
## 12V DC Cooling Fan

This brushless DC fan will run straight off the 12V rail of your power supply. This is the type of fan used in most computers.

Size: 80mm square x 25mm deep  
Rated: 12V DC @ 0.2A  
Operating Range: 10.2-13.8V DC  
Speed: 3100 RPM  
Air Delivery: 34  $\text{Ft}^3/\text{min.}$   
Noise Level (Max): 35dB (A)

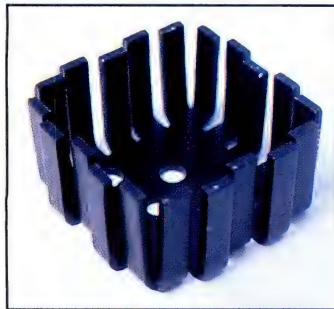
Cat Y-8507

**\$32<sup>95</sup>**





# Heatsinks

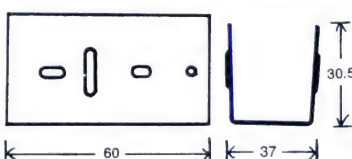
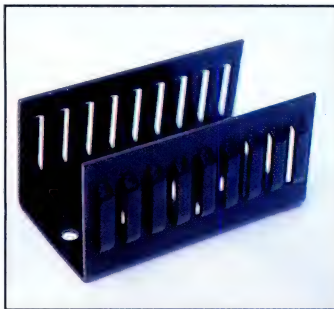


## Powerfin For TO-3

The unique fin design gives a very high air to metal ratio for maximum heat dissipation in a very small space. Pre-punched to suit TO-3 transistors. Black anodised finish.

Thermal Resistance: 6°C/W

**\$2<sup>95</sup>**  
Cat H-3400

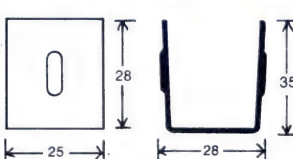
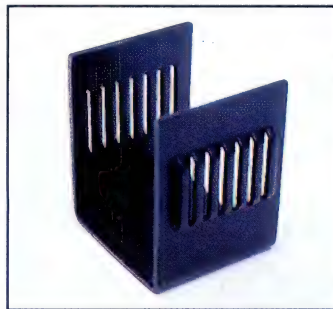


## Universal

The universal hole pattern allows for the mounting of virtually all 'power' type semiconductors. Black anodised finish and ribbed walls provide maximum efficiency.

Thermal Resistance: 8°C/W

**\$2<sup>95</sup>**  
Cat H-3401

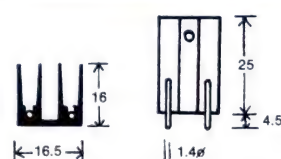
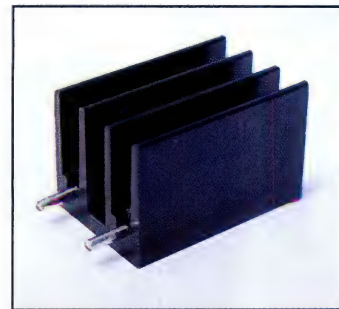


## Mini

Suits virtually all flat (plastic type) semiconductors... so it's used extensively on PCBs, etc. Vertical flutes provide good thermal efficiency.

Thermal Resistance: 12°C/W

**\$1<sup>95</sup>**  
Cat H-3402

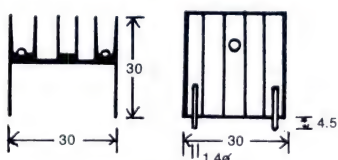
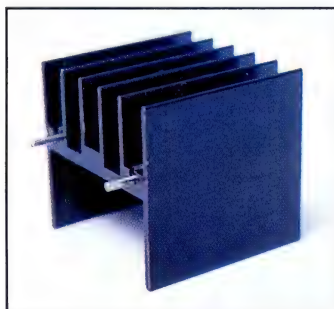


## Small PCB Mount

Designed to be soldered directly to the tracks with the fins mounted vertically for maximum efficiency. Pre-drilled to take a single flat-pack semiconductor.

Thermal Resistance: 18°C/W

**\$3<sup>95</sup>**  
Cat H-3490

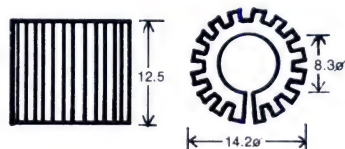


## Large PCB Mount

Designed to be soldered directly to the tracks with the fins mounted vertically for maximum efficiency. Pre-drilled to take a single flat-pack semiconductor.

Thermal Resistance: 10°C/W

**\$4<sup>95</sup>**  
Cat H-3495



## TO-5 Clip-On

Designed to be a snug fit on TO-5 transistors to ensure the best possible heat transfer. Can be mounted in seconds... push it on.

Thermal Resistance: 60°C/W

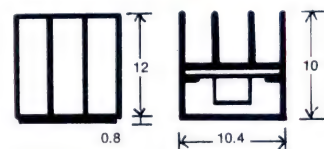
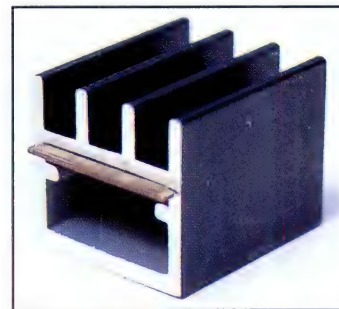
**\$1<sup>50</sup>**  
Cat H-3412



## Snap-On TO-220 Cooler

Snap on heatsinks to suit TO-220 type plastic power transistors. Light and simple to use, they simply snap over the transistor and can be installed in seconds.

**\$1<sup>95</sup>**  
Cat H-3416



## Snap-On TO-126 Cooler

Snap on heatsinks to suit TO-126 type plastic power transistors. Light and simple to use, they simply snap over the transistor and can be installed in seconds.

**\$1<sup>85</sup>**  
Cat H-3417

**All measurements are in millimetres**

## TRANSISTOR INSULATORS

### TO-3 Insulating Cap

A high quality plastic cap that simply press fits to TO-3 transistors. Helps eliminate shorts to the chassis and exposed high collector voltages.

**95¢**  
Cat H-1918  
10 or more 85¢



### TO-3 Mounting Kit

A pack of 4 mica washers and bush sets to suit TO-3 transistors. Specially selected to give maximum heat transfer.

**\$1<sup>95</sup>/pk**  
Cat H-1917  
10 packs or more \$1.75



### TO-220 Mounting Kit

Pack of 5 quality insulating washers and bushes to suit TO-220 type semis.

Cat H-1916

**\$1<sup>50</sup>**  
10 packs or more \$1.35





## QUICK CONNECTORS



### Crimp Connector Packs

**quikcrimp**  
AUSTRALIA

A thousand and one uses around the home, workshop, garage, etc. Quick crimp makes fixing connectors and joining electrical cable fast, easy and effective.

Description	Qty.	Cat No.
2.8mm Fem/Recept. Red	7	H-3043
3mm eye. Red	11	H-3010
3mm open end spade. Red	10	H-3015
4mm eye. Red	10	H-3011
4mm eye. Blue	10	H-3030
4mm open end spade. Blue	10	H-3036
4mm bullet male. Red	9	H-3026
4mm bullet female. Red	7	H-3027
4.8mm Fem/Recept. Red	7	H-3044
5mm eye. Red	10	H-3012
5mm eye. Blue	10	H-3031
5mm eye. Yellow	6	H-3060
5mm open end spade. Yellow	7	H-3065
5mm bullet male. Blue	9	H-3050
5mm bullet female. Blue	6	H-3055
6mm eye. Blue	9	H-3032
6mm eye. Yellow	5	H-3061
6.3mm F/Recept. Ins Red	6	H-3046
6.3mm Male Tab Blue	6	H-3042
6.3mm spade. Red	10	H-3024
6.3mm spade socket. Red	8	H-3022
6.3mm spade socket. Blue	8	H-3040
6.3mm spade socket. Yellow	6	H-3070
6.3mm insul. spade socket. Blue	6	H-3048
6.3mm piggyback. Blue	7	H-3045
6.3mm M/F/M wire double adaptor.	8	H-3080
8mm eye. Blue	7	H-3033
8mm eye. Yellow	4	H-3062
10mm eye. Yellow	3	H-3063
Straight wire joiner. Red	9	H-3020
Straight wire joiner. Blue	9	H-3038
Straight wire joiner. Yellow	5	H-3068
Closed end connector.	7	H-3083
Quick tab joiner. No stripping req.	6	H-3085
Wire Tap 3.0mm - 4.5mm	4	H-3086

**\$3.95/pk.**



### Assorted Crimp Lug Pack

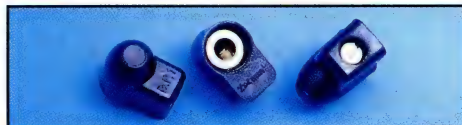
30 crimp lugs of various types and sizes including joiners. All with insulation attached.

10 or more \$5.35/pk Cat H-1996 **\$5.95/pk.**



### Solder Type Quick Connectors

Description	Qty.	Cat No	Price
2.8mm spade ml	15	H-5038	<b>\$2.95</b>
2.8mm spade fem	15	H-5036	<b>2.95</b>
5mm eye term	12	H-5032	<b>2.95</b>
6.3mm spade ml	10	H-5016	<b>2.95</b>
6.3mm spade fem	10	H-5012	<b>2.95</b>
6.3mm plastic covers	10	H-5022	<b>1.95</b>
Bullet terminals. ml	10	H-5006	<b>2.95</b>
Plas cover, suit above	10	H-5007	<b>1.50</b>
Bullet Term. fem	10	H-5008	<b>2.95</b>
Plas cover, suit above	10	H-5009	<b>1.50</b>



### BP Connectors

The quick and easy way to join, or terminate wire. Suitable for 240 volts. Simply wind the wire, slip it in and tighten the screw. In handy pack of 10.

Cat H-6710 **\$3.95/pk**

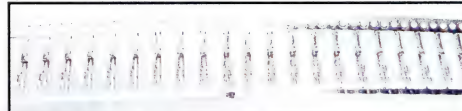


### Matrix Board Pins

In pack of 50. Matrix board pins designed to make connections to PCB's quick and easy. Use with matching matrix board sockets below.

10 or more \$3.55/pk Cat H-5590 **\$3.95/pk**

Also available, flat matrix-board pins in packs of 25. Cat H-5594 **\$2.95**

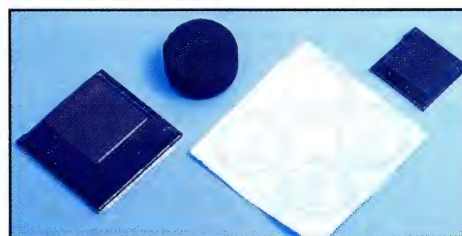


### Matrix Board Sockets,

In packs of 25. To suit matrix board pins (H-5590) above.

10 or more \$5.35/pk Cat H-5592 **\$5.95/pk**

## RUBBER FEET



### Self Adhesive (Small)

15mm x 15mm square. In pack of 4.

**\$1.95/pk**

Cat H-1745

### 10 or more \$1.75/pk

### Self Adhesive (Large)

Self adhesive 20mm x 20mm rubber feet. In pack of 4.

**\$2.95/pk**

Cat H-1749

### 10 or more \$2.65/pk

### Screw-On Round

13mm round rubber feet. 3mm fixing hole. In pack of 8.

**\$2.95/pk**

Cat H-1736

### 10 or more \$2.65/pk

### Acrylic Feet

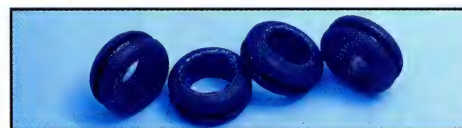
Self adhesive clear acrylic feet. In pack of 4.

**\$1.95/set**

Cat H-1740

## GROMMETS

Heavy duty grommets which are essential for the prevention of fraying and shorts where a cable passes through a chassis, etc.



Hole Size	Bore Size	Qty	Cat No.	Price/pk	10 up
8mm	5.5mm	10	H-1712	<b>\$1.95</b>	<b>\$1.75</b>
12mm	6mm	10	H-1716	<b>\$2.75</b>	<b>\$2.45</b>
16mm	9mm	8	H-1719	<b>\$2.95</b>	<b>\$2.65</b>



### Cord Clamp Grommets

A self-locking grommet which maintains a grip on the cable without separate clamps. In pack of 4. Suits 3-core miniflex or equivalent size cable. Hole size 12 - 16mm.

Cat H-1724 **\$1.95/pk**

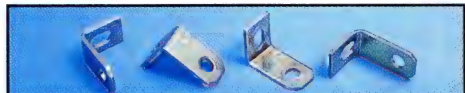


### Cable Clamps

Heavy duty nylon cable clamps. In packs of 5.

Cable diam. Cat No.

5mm	H-1964	<b>\$1.50/pk</b>
6mm	H-1965	
8mm	H-1966	<b>10 or more \$1.35/pk</b>



### Right Angle Metal Brackets

Measuring 8mm x 16mm x 6mm wide with 3mm clearance and one adjustable slot. In pack of 6.

10 or more \$6.25/pk Cat H-1895 **\$6.95/pk**

## CABLE TIES

Tough and flexible, with non-slip locking action that ensures the tie won't slacken or fall off. All sizes are in handy packs of 100 or 25 ties.



### Indoor Use - Colour: Neutral

Size	Pack	Qty.	Cat No.	Price/pk
100 x 2.4mm	100		H-1974	<b>\$5.95</b>
194 x 2.4mm	100		H-1976	<b>\$9.95</b>
292 x 3.6mm	100		H-1978	<b>\$16.95</b>
370 x 4.8mm	100		H-1979	<b>\$19.95</b>
102 x 2.5mm	25		H-1950	<b>\$1.50</b>
194 x 2.5mm	25		H-1951	<b>\$2.95</b>
292 x 3.5mm	25		H-1952	<b>\$4.95</b>
370 x 4.8mm	25		H-1953	<b>\$6.95</b>

### Outdoor Use - Colour: Black

Size	Pack	Qty.	Cat No.	Price/pk
102 x 2.4mm	100		H-1980	<b>\$6.95</b>
194 x 2.4mm	100		H-1982	<b>\$10.95</b>
292 x 3.6mm	100		H-1984	<b>\$18.95</b>
370 x 4.8mm	100		H-1985	<b>\$22.95</b>
102 x 2.4mm	25		H-1955	<b>\$1.95</b>
194 x 2.4mm	25		H-1956	<b>\$3.45</b>
292 x 3.6mm	25		H-1957	<b>\$5.45</b>
370 x 4.8mm	25		H-1958	<b>\$7.45</b>



### Releasable Cable Ties

Cable ties that can easily be released and re-tied. They're black and suitable for indoor or outdoor use. In handy packs of 100.

100mm long x 4.5mm wide	Cat H-1995	<b>\$9.95</b>
194mm long x 3.5mm wide	Cat H-1997	<b>\$11.95</b>



### Cable Tie Mounts

Self adhesive mounts with slot for securing cable ties to instrument cases, etc. In packs of 50.

19 x 19mm	Cat H-1991	<b>\$9.95/pk</b>
25 x 25mm	Cat H-1993	<b>\$12.95/pk</b>



## SCREWS



### Switch Screws

Pack of 10 screws suitable for most switches with threaded mounting holes. Each 2mm x 5mm.

10 packs or more \$1.75/pk Cat H-1674 **\$1.95/pk**

### Self Tapping Screws

In handy packs. Zinc-plated self tapping screws.

Description.	Qty.	Cat No.	Price/Pk	10 up
No.4 x 4mm	500	H-1625	<b>\$10.95</b>	<b>\$9.85</b>
No.4 x 6mm	25	H-1611	<b>1.25</b>	<b>1.12</b>
No.4 x 12mm	25	H-1612	<b>1.50</b>	<b>1.35</b>
No.8 x 12mm	25	H-1632	<b>1.75</b>	<b>1.57</b>

## NUTS & BOLTS



### Steel

Packs of M3 steel round head, zinc plated screws.

Description.	Qty.	Cat No.	Price/Pk	10 up
9mm Long	25	H-1054	<b>\$2.95</b>	<b>\$2.65</b>
12mm Long	25	H-1064	<b>2.95</b>	<b>2.65</b>
25mm Long	25	H-1074	<b>2.95</b>	<b>2.65</b>
Hex Nuts	30	H-1324	<b>1.25</b>	<b>1.12</b>
Shake-Proof Washers	50	H-1472	<b>1.50</b>	<b>1.35</b>
Flat Washers	50	H-1482	<b>1.25</b>	<b>1.12</b>



### Nylon

White nylon, will resist high temperatures. Ideal for transistor and heatsink use.

Description.	Qty.	Cat No.	Price/Pk	10 up
4BAx12mm cheese hd.	10	H-1012	<b>\$1.95</b>	<b>\$1.75</b>
4BA x 25mm " "	10	H-1022	<b>2.50</b>	<b>2.25</b>
4BA Hex nuts	12	H-1302	<b>2.95</b>	<b>2.65</b>
4BA washers	12	H-1452	<b>1.65</b>	<b>1.48</b>
6BAx12mm cheese hd.	10	H-1032	<b>1.85</b>	<b>1.66</b>
6BA x 25mm " "	10	H-1042	<b>1.95</b>	<b>1.75</b>
6BA Hex nuts	12	H-1312	<b>2.95</b>	<b>2.25</b>
6BA washers	12	H-1462	<b>1.50</b>	<b>1.35</b>



### Assorted BA Nuts & Bolts

Packs of BA cheesehead bolts, nuts and shakeproof washers, steel flat washers.

Description.	Qty.	Cat No.	Price/Pk	10 up
4BA x 12mm steel bolts	25	H-1082	<b>\$1.50</b>	<b>\$1.35</b>
4BA Hex brass nuts	25	H-1332	<b>1.95</b>	<b>1.75</b>
4BA s-proof steel washers	50	H-1486	<b>1.95</b>	<b>1.75</b>
4BA flat steel washers	50	H-1488	<b>1.50</b>	<b>1.35</b>
6BA x 12mm brass bolts	25	H-1092	<b>4.95</b>	<b>4.45</b>
6BA brass nuts	25	H-1342	<b>1.95</b>	<b>1.75</b>

### 6BA Pack

Contains 12 x 12mm brass bolts, 12 brass nuts and 12 washers.

10 or more \$5.35/pk. Cat H-1684 **\$5.95/pk.**

### 8BA Pack

Contains 12 x 12mm brass bolts, 12 brass nuts and 12 washers.

10 or more \$6.25/pk. Cat H-1682 **\$6.95/pk.**

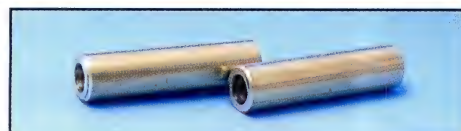
## SPACERS

### Insulated Type

Insulated spaces complete with screws and washers. 8mm outside diameter requiring a 3mm clearance hole.



Description.	Qty.	Cat No.	Price/Pk	10 up
10mm	5	H-1861	<b>\$4.95</b>	<b>4.45</b>
15mm	5	H-1862	<b>4.95</b>	<b>4.45</b>
20mm	5	H-1871	<b>5.45</b>	<b>5.35</b>
25mm	5	H-1872	<b>5.95</b>	<b>5.35</b>

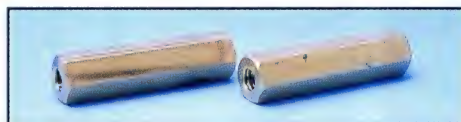


### Round Brass

Packs of 6mm outside diameter, round brass spacers with 4BA (1/8") drilling.

Description	Qty	Cat No.
6mm	12	H-1831
9mm	10	H-1832
12mm	8	H-1833
25mm	6	H-1834

**\$4.95/pk**  
10 pks or more \$4.45/pk



### Tapped Hex Brass

Packs of 6mm outside diameter, hexagonal brass spacers with 4BA tapping.

Description	Qty	Cat No.
9mm	6	H-1842
12mm	6	H-1843
25mm	4	H-1847

**\$2.95/pk**  
10 pks or more \$2.65/pk



### Circuit Board Supports

9mm nylon PCB supports. Require 4mm drilling in the PCB and 4.75mm clearance hole in chassis. In pack of 6.

10 or more \$1.75/pk Cat H-1981 **\$1.95/pk**

## MISSING PARTS?

Whether you're repairing old equipment or assembling a new project from scratch, see us first for that extra screw, nut, spacer or whatever.



## Zippy Boxes

With both aluminium & plastic lids!

These are the boxes preferred and used by the major electronics magazines because of their quality, versatility and value. Made from lightweight, high impact resistant ABS plastic, they're ideal for a wide range of applications. Dick Smith Electronics Zippy Boxes have deep ribs which add to the strength and are ideal for mounting PCBs without screws. Each box comes with two tight-fitting lids, one aluminium & the other plastic, which can easily be sealed against the weather.

Description	Size(mm)	Cat No.	Price	10 up
Small - UB5	28 x 54 x 83	H-2855	<b>\$2.95</b>	<b>\$2.65</b>
Medium - UB3	41 x 68 x 130	H-2853	<b>\$3.95</b>	<b>\$3.55</b>
Large - UB1	50 x 90 x 150	H-2851	<b>\$4.95</b>	<b>\$4.45</b>
Giant - UB2	60 x 113 x 196	H-2852	<b>\$6.95</b>	<b>\$6.25</b>

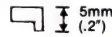
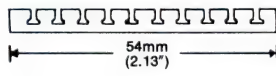


## PCB Slot Boxes With 'Tractor Grip'

If you're building a project that's PCB-based, these are exactly what you need! Available in seven handy sizes and made of strong grey ABS plastic, they come complete with case screws and 'tractor-grip' board supports that mesh with matching grooves on all four sides of the case's interior to ensure your PCB stays put!

PCB not included.

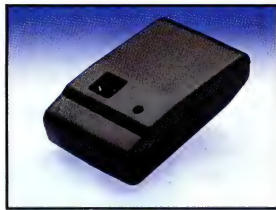
		Price	10 Up
55x55x42mm	(GG-01) Cat H 2870	<b>\$3.95</b>	<b>\$3.55</b>
75x50x27mm	(GG-02) Cat H 2872	<b>\$4.95</b>	<b>\$4.45</b>
85x56x40mm	(GG-03) Cat H 2874	<b>\$5.95</b>	<b>\$5.35</b>
100x50x40mm	(GG-04) Cat H 2876	<b>\$6.95</b>	<b>\$6.25</b>
125x60x40mm	(GG-05) Cat H 2878	<b>\$7.95</b>	<b>\$7.15</b>
145x85x50mm	(GG-06) Cat H 2880	<b>\$8.95</b>	<b>\$8.05</b>
180x110x60mm	(GG-07) Cat H 2882	<b>\$9.95</b>	<b>\$8.95</b>



Tongue equivalent to 1.5mm (0.062") thick PCB.



## PLASTIC INSTRUMENT CASES



### 'Pocket' case

**57 x 36 x 17mm**

Ideal for keyring transmitters, etc. Moulding has provision for 12V lighter battery (VR22....battery clips included) and push button. PCB size to 45 x 32mm. Has pocket clip on back.

10 or more \$4.45

Cat H-2497

**\$4.95**

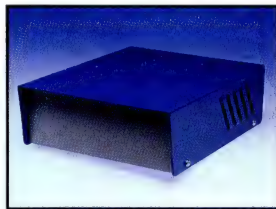


**155 x 65 x 160mm**

Has 16 vertical mounting slots for 145mm long PCBs (up to 55mm high) and 23 mounting points for horizontal PCBs. Top and bottom halves screw together. Includes front and back panels and screws.

10 or more \$13.45 Cat H-2508

**\$14.95**

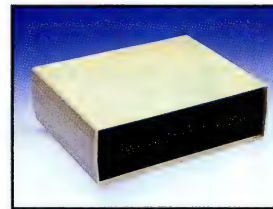


### Project Case

A two-part case that's ideal for small instruments, etc. Twin 'U' shape construction with slotted sides for ventilation. Steel top and sides with aluminium base/front/rear. Size: 160 x 130 x 50mm.

10 or more \$11.65 Cat H-2762

**\$12.95**

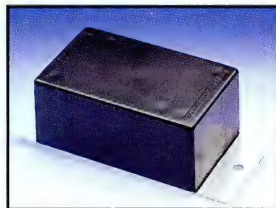


**200 x 65 x 160mm**

Slotted to allow many and varied PCB mounting positions. Attractive and sturdy it's ideal for a large range of projects and instruments. Comes complete with black plastic front and rear panels, assembly screws and rubber feet.

10 or more \$17.95 Cat H-2505

**\$19.95**



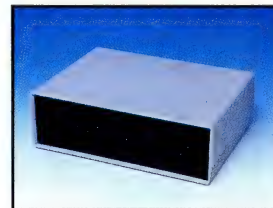
**66 x 46 x 30mm**

A moulded case which is perfect for small projects. Lid has flange mounts and it comes with matrix style assembly board. It's ideal for car projects.

10 or more \$8.05

Cat H-2765

**\$8.95**

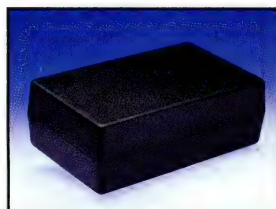


**250 x 190 x 80mm**

Beautifully moulded and fitting instrument case which separates into two halves and has black plastic front and rear panels. There are plenty of PCB mounting slots for mounting either vertically or horizontally and it comes with rubber feet and assembly screws.

10 or more \$20.65 Cat H-2507

**\$22.95**



### PJ Box

**90 x 56 x 32mm**

A well finished mini case which is ideal for all-weather projects! Made in two identical halves which can be glued together for a watertight seal.

10 or more \$4.45

Cat H-2857

**\$4.95**

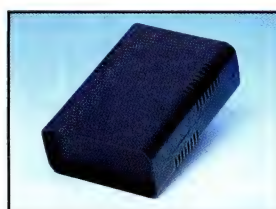


**130 x 75 x 130mm**

Top and bottom air vent slots make this ideal as a power supply case (or many other heat generating projects). PCB mounting slots are suitable for various sized PCBs up to 130 x 75mm. Comes with assembly screws.

10 or more \$14.35 Cat H-2516

**\$15.95**

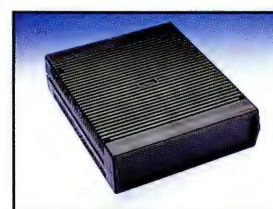


**95 x 45 x 145mm**

A precision instrument case which has specially designed vents to allow the free circulation of air. Snap together design with front and back panels.

10 or more \$11.65 Cat H-2503

**\$12.95**



**210 x 55 x 175mm**

Just the right size and shape for a large range of instruments, communications equipment, etc. Has removable front and rear panels and provision for speaker at both top and bottom. Comes with assembly screws.

10 or more \$15.25 Cat H-2520

**\$16.95**



# Metal Cases



## Metal Cabinets

Sturdy, lightweight and beautifully constructed. Ideal cabinets for projects with meters and controllers which need to be mounted on the front panel. Twin 'U' shape design with metal top & sides and aluminium front/rear/base. The side panels have cooling slots.

Size(mm)	Cat No.	Price	10 Up
Length Height Depth			
80 x 55 x 100mm	H-2741	<b>\$8.95</b>	<b>\$8.05</b>
100 x 60 x 150mm	H-2742	<b>\$11.95</b>	<b>\$10.75</b>
130 x 75 x 150mm	H-2743	<b>\$13.95</b>	<b>\$12.55</b>
160 x 70 x 185mm	H-2744	<b>\$14.95</b>	<b>\$13.45</b>



AUSTRALIAN  
• MADE •

## Diecast Aluminium Boxes

Ideal for RF projects (the lids form an effective screen) or for projects which are subject to weather (they can easily be made watertight). With channelled walls for easy PCB mounting they're lightweight and extremely robust. Also ideal for projects involving heat as the case itself makes an excellent heatsink.

Size(mm)	Cat No.	Price	10 Up.
Length Height Depth			
191 x 65 x 120	H-2201	<b>\$25.95</b>	<b>\$23.35</b>
150 x 50 x 80	H-2206	<b>\$22.95</b>	<b>\$20.65</b>
120 x 35 x 94	H-2207	<b>\$22.95</b>	<b>\$20.65</b>
120 x 57 x 94	H-2204	<b>\$19.95</b>	<b>\$17.95</b>
122 x 41 x 66	H-2211	<b>\$11.95</b>	<b>\$10.75</b>
110 x 31 x 62	H-2202	<b>\$13.95</b>	<b>\$12.55</b>
100 x 25 x 50	H-2221	<b>\$8.95</b>	<b>\$8.05</b>



## Aluminium Boxes

Economical and easy to work with! A wide range of sizes to suit just about any project. Made in two sections, they come complete with screws.

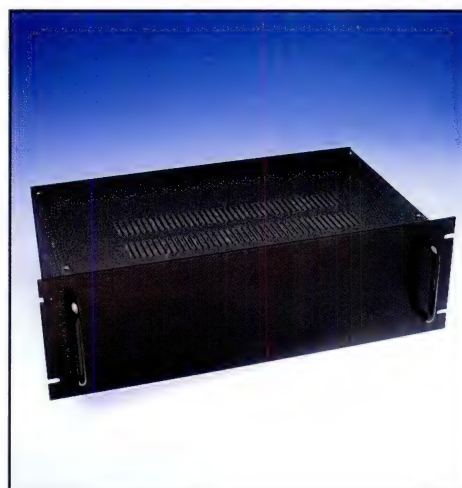
Size (mm)	Cat No.	Price	10 Up.
Length Height Depth			
155 x 115 x 180	H-2335	<b>\$15.95</b>	<b>\$14.35</b>
130 x 100 x 150	H-2330	<b>\$13.95</b>	<b>\$12.55</b>
100 x 75 x 125	H-2320	<b>\$9.95</b>	<b>\$8.95</b>
75 x 55 x 130	H-2325	<b>\$8.95</b>	<b>\$8.05</b>
70 x 50 x 100	H-2300	<b>\$7.95</b>	<b>\$7.15</b>
60 x 45 x 100	H-2305	<b>\$6.95</b>	<b>\$5.92</b>



## Extruded Aluminium Cases

Made from 18-gauge extruded aluminium for extra strength. The extrusion measures 76 x 102mm and it's available in three lengths. With four slots for PCB insertion (PCB size: 92 x 71mm). Includes two end plates and screws.

Length	Cat No.	Price	10 Up.
76mm	H-2420	<b>\$19.95</b>	<b>\$17.95</b>
102mm	H-2425	<b>\$24.95</b>	<b>\$22.45</b>
153mm	H-2430	<b>\$29.95</b>	<b>\$26.95</b>



## 19" Rack Mounting Case

Quality black instrument case fits standard 19" racks. Supplied flat and can be assembled in minutes. Heavy gauge (3mm) front panel and slotted top and bottom panels. Size: 420 x 250 x 140mm. Cat H-2481

**\$59<sup>95</sup>**  
10 or more: **\$50.97**



## Instrument Cases

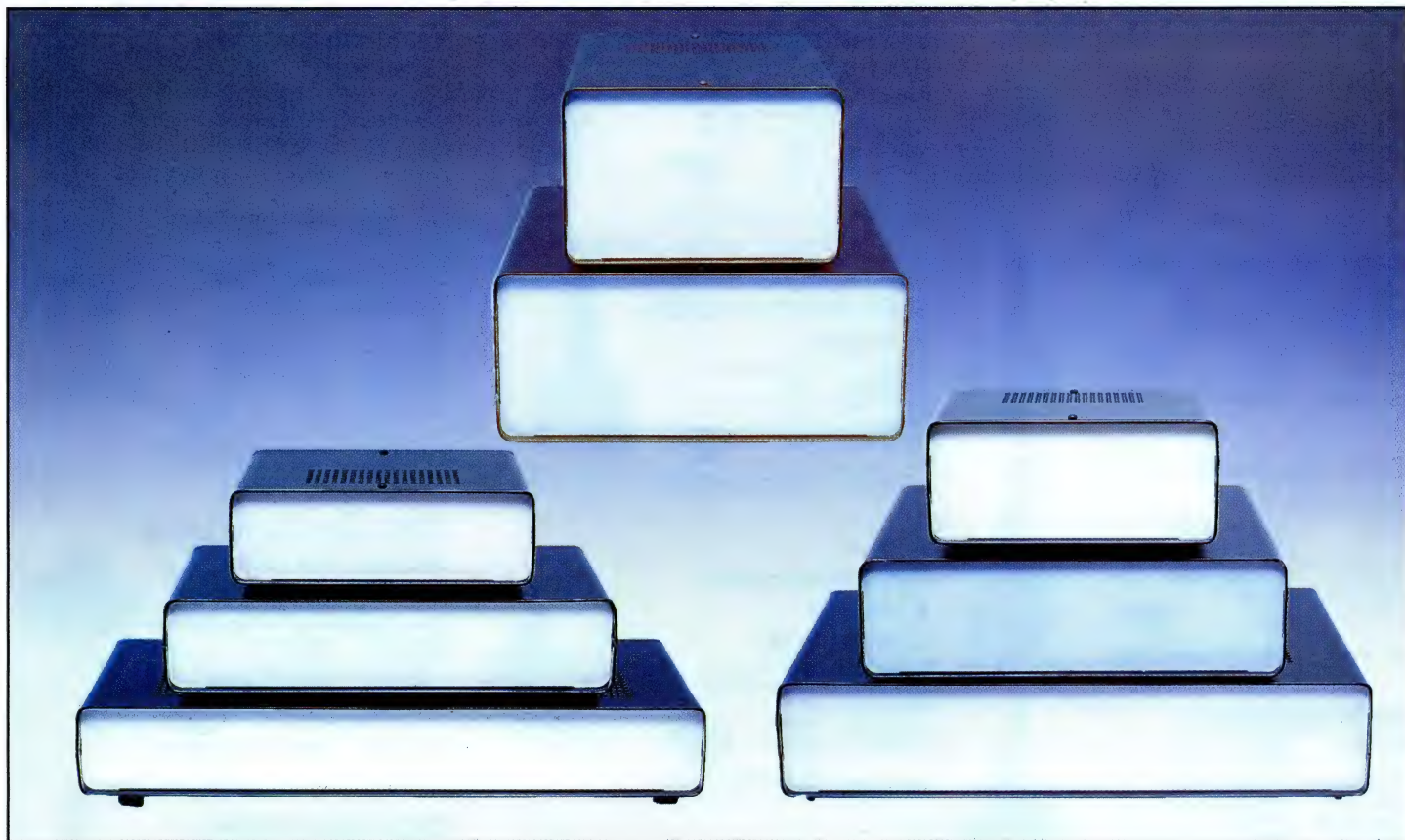
Quality Australian made K & W instrument cases. They're inexpensive with a steel top cover and sides, and aluminium base/front/rear. They come with either pressed dimple feet or rubber feet (depending on size). A neat 5mm recess on top and sides gives the front panel a professional finish.

Front Panel Size: Length (-10mm) x Height (-5mm)

Overall Size:	Vented	Cat No.	Price
Length Height Depth			
305 x 150 x 200	Yes	H-2814	<b>\$35.95</b>
305 x 90 x 200	Yes	H-2812	<b>\$29.95</b>
255 x 150 x 155	Yes	H-2810	<b>\$29.95</b>
255 x 77 x 155	Yes	H-2808	<b>\$25.95</b>
200 x 65 x 130	No	H-2806	<b>\$19.95</b>
100 x 77 x 130	No	H-2804	<b>\$17.95</b>
150 x 52 x 100	No	H-2802	<b>\$15.95</b>

Buy 10 get 10% Off!





## Length Height Depth

203.2 x	63.5 x	177.8mm	Cat H-3100	<b>\$19.95</b>
304.8 x	63.5 x	177.8mm	Cat H-3102	<b>\$24.95</b>
431.8 x	63.5 x	177.8mm	Cat H-3104	<b>\$29.95</b>
203.2 x	88.9 x	177.8mm	Cat H-3106	<b>\$34.95</b>
304.8 x	88.9 x	279.4mm	Cat H-3108	<b>\$44.95</b>
431.8 x	88.9 x	279.4mm	Cat H-3110	<b>\$59.95</b>
203.2 x	132.0 x	279.4mm	Cat H-3112	<b>\$44.95</b>
304.8 x	132.0 x	279.4mm	Cat H-3114	<b>\$59.95</b>

## Steel Enclosures:

**NEW '93**

Easy to assemble and conforming with the IEC297 standard, these high-quality cases are sturdy and attractive, too! They pack flat for easy storage and shipping and feature easy-to-modify aluminium front and rear panels.

## 19" Rack Cases

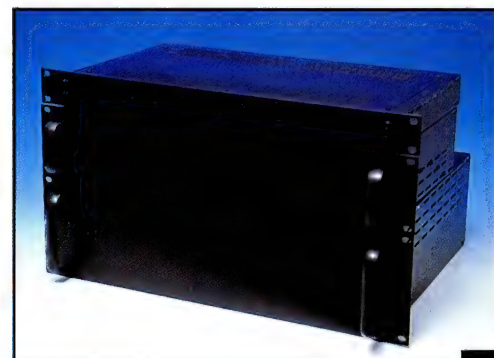
Heavy-duty steel rack cases designed and built to industrial standards, yet priced to suit the enthusiast. Superbly finished, this series complies with IEC 297, IEA RS-310 C1977 & DIN41494 standards and are compatible with all 19" equipment. Each is supplied with a spare 'unflanged' front panel and eight mounting rails - ideal for heavy transformers and to improve structural rigidity. They come packed flat for convenient shipment and storage, yet are very easy to assemble.

## Length Height Depth

1U 19" 424 x	38 x	254mm	Cat H-2682	<b>\$75</b>
2U 19" 424 x	81 x	254mm	Cat H-2684	<b>\$90</b>
3U 19" 424 x	127 x	332mm	Cat H-2686	<b>\$105</b>

**NEW '93**

Spare 1U Panel	Cat H-2683	<b>\$14.95</b>
Spare 2U Panel	Cat H-2685	<b>\$19.95</b>
Spare 3U Panel	Cat H-2687	<b>\$24.95</b>



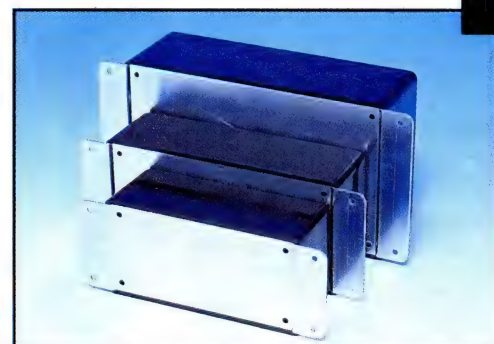
## Easy-Mount Boxes

Perfect for automotive applications, the bases of these project boxes have flanges that allow easy fastening to flat surfaces. Has ABS plastic casing and aluminium base.

## Length Height Depth

100 x	40 x	50mm	Cat H-2890	<b>\$9.95</b>
125 x	40 x	60mm	Cat H-2892	<b>\$11.95</b>
145 x	50 x	85mm	Cat H-2894	<b>\$13.95</b>

**NEW '93**





# Switches

## TOGGLE SWITCHES

### SPDT Ultraminiature

Rated: 250V AC @ 1.5A  
Mounting: Threaded bush  
Overall Size: 8 x 5 x 28mm  
Clearance: 14.5mm  
Cut Out: 5mm **\$1.95**

Cat P-7673 10 or more \$1.76



### DPDT Ultraminiature

Rated: 125V AC @ 3A  
Mounting: Threaded bush  
Overall Size: 11 x 9 x 28mm  
Clearance: 14.5mm  
Cut Out: 5mm **\$2.95**

Cat P-7674 10 or more \$2.51



### SPDT Standard Miniature

Rated: 125V AC @ 5A  
240V AC @ 2A  
Overall Size: 13 x 7 x 33mm  
Mounting: Threaded bush  
Clearance: 13mm  
Cut Out: 6mm **\$1.95**

Cat P-7654 10 or more \$1.66



### DPDT Miniature

Rated: 125V AC @ 5A  
240V AC @ 2A  
Overall Size: 13 x 13 x 34mm  
Mounting: Threaded bush  
Clearance: 14.5mm  
Cut Out: 6mm **\$2.95**

Cat P-7656 10 or more \$2.51



### DPDT Miniature Centre 'Off'

Rated: 125V AC @ 5A  
240V AC @ 2A  
Overall Size: 12 x 12 x 35mm  
Mounting: Threaded bush  
Clearance: 18mm  
Cut Out: 6.5mm **\$2.95**

Cat P-7682 10 or more \$2.51



### DPDT Miniature Centre 'Off'

Momentary One Side Only  
Rated: 125V AC @ 6A  
240V AC @ 2A  
Overall Size: 13 x 13 x 35mm  
Mounting: Threaded bush  
Clearance: 15mm  
Cut Out: 6mm **\$4.95**

Cat P-7684 10 or more \$4.46



### 4PDT Miniature

Rated: 125V AC @ 6A  
Overall Size: 23 x 13 x 36mm  
Mounting: Threaded bush  
Clearance: 21mm  
Cut Out: 6.5mm **\$9.95**

Cat P-7658 10 or more \$8.96



### DPDT Miniature Heavy Duty

Rated: 125V AC @ 10A  
Overall size: 13 x 13 x 36mm  
Mounting: Threaded bush  
Clearance: 19mm  
Cut Out: 6mm **\$5.95**

Cat P-7652 10 or more \$5.36



### SPDT Miniature R/Angle

Rated: 120V AC @ 5A  
250V AC @ 2A  
Overall Size: 7 x 13 x 35mm  
Mounting: PCB  
Clearance: 21mm  
Cut Out: 6.5mm **\$3.95**

Cat P-7686 10 or more \$3.36



### SPDT Ultraminiature R/angle

Rated: 28V DC @ 3A  
Mounting: PCB  
Overall Size: 8 x 5 x 25mm  
Clearance: 15mm  
Cut Out: 5mm **\$2.95**

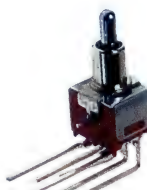
Cat P-7676 10 or more \$2.66



### DPDT Miniature R/Angle Centre 'Off'

Rated: 120V AC @ 1A  
Overall Size: 9 x 5 x 25mm  
Mounting: PCB  
Clearance: 15mm  
Cut Out: 5mm **\$3.95**

Cat P-7680 10 or more \$3.36



### Weatherproof Hood

Designed for miniature toggle switches. Screws-on over the toggle to prevent the ingress of water. Ideal for marine applications, etc. Note: Does not protect the rear of the switch.

**75¢**

Cat H-1914 10 or more 64¢



### SPST Standard

With 'On/Off' indicator plate  
Rated: 125V AC @ 3A  
Overall Size: 14 x 27 x 42mm  
Mounting: Threaded bush  
Clearance: 20.5mm  
Cut Out: 12mm **\$2.35**

Cat P-7668 10 or more \$1.95



### DPDT Standard

With 'On/Off' indicator plate  
Rated: 125V AC @ 6A  
Overall Size: 18 x 25 x 48mm  
Mounting: Threaded bush  
Clearance: 26mm  
Cut Out: 12mm **\$3.35**

Cat P-7670 10 or more \$2.85



### DPDT Standard Centre 'Off'

With On/Off/On indicator plate.  
Rated: 125V AC @ 10A  
250V AC @ 6A  
Overall Size: 19 x 34 x 53mm  
Mounting: Threaded bush  
Clearance: 28mm  
Cut Out: 12mm **\$4.25**

Cat P-7672 10 or more \$3.60



### Waterproof SPST Standard

Rated: 12V DC @ 10A  
Overall Size: 32 x 18 x 58mm  
Mounting: Threaded bush  
Clearance: 40mm  
Cut Out: 12mm **\$9.95**

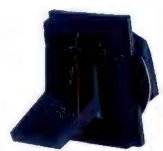
Cat P-7664 10 or more \$8.96



### DPDT Large Lever Action Paddle

Rated: 125V AC @ 6A  
Overall size: 20 x 30 x 40mm  
Mounting: Threaded bush  
Clearance: 15mm  
Cut Out: 18mm **\$4.95**

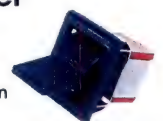
Cat P-7696 10 or more \$4.56



### DPDT Miniature Lever Action Paddle

Rated: 120V AC @ 5A  
240V AC @ 2A  
Overall size: 11.43 x 19.43 x 35mm  
Mounting: Snap Lock  
Clearance: 19mm  
Cut Out: 12.7 x 15.24mm **\$3.95**

Cat P-7693 10 or more \$3.36



### SPDT Illuminated

Rated: 12V DC @ 16A  
Lamp: 12V  
Overall Size: 15 x 25 x 65mm  
Mounting: Threaded Bush  
Clearance: 26mm  
Cut Out: 12mm **\$4.25**

Cat P-7666 10 or more \$3.61



### DPDT Standard Centre 'Off'

Momentary Action Both Sides.  
Rated: 12V DC @ 20A  
Overall Size: 26 x 33 x 65mm  
Mounting: Threaded bush  
Clearance: 31mm  
Cut Out: 12mm **\$5.95**

Cat P-7650 10 or more \$5.36



## PUSH BUTTON SWITCHES

### Miniature SP - Normally Open

Rated: 125V AC 1A  
Overall size: 28.1 x 10mm (diam.)  
Clearance: 17mm  
Cut Out: 7mm  
Mounting: Threaded bush **\$1**

Cat P-7560 10 or more 85¢



### Miniature SP - Normally Closed

Rated: 125V AC 1A  
Overall size: 28.1 x 10mm (diam.)  
Clearance: 17mm  
Cut Out: 7mm  
Mounting: Threaded bush **\$1**

Cat P-7561 10 or more 90¢





## PUSH BUTTON SWITCHES

### SPST Mini Push 'On/Off'

**NEW '93**

Rated: 250VAC 1A  
Overall Size: 14.2mm x 14.2mm (diam. incl. bezel) x 28mm  
Clearance: 22mm  
Cut Out: 11mm x 12.5mm  
Mounting: Snap lock  
Red Cat P-7540  
Black Cat P-7542

**\$2.95**

10 or more \$2.62



### DPDT Alternate Action

Rated: 125V AC 3A  
Overall size: 41.5 x 11 x 11.5mm  
Clearance: 25.5mm  
Cut Out: 6mm  
Mounting: Threaded bush

**\$5.95**

Cat P-7564  
10 or more \$5.36



### DPDT Momentary Action

Rated: 125V AC 3A  
Overall size: 41.5 x 13 x 13mm  
Clearance: 26.1mm  
Cut Out: 6mm  
Mounting: Threaded bush

**\$5.95**

Cat P-7574  
10 or more \$5.36



### SP Alternate Action

Rated: 250 AC 3A  
Overall size: 15 x 15 x 37.8mm  
Clearance: 27.3mm  
Cut Out: 12mm  
Mounting: Threaded bush

**\$4.95**

Cat P-7566  
10 or more \$1.66



### SP Momentary Action Push 'On'

Rated: 250V AC 3A  
Overall size: 15 x 15 x 37.8mm  
Clearance: 27.3mm  
Cut Out: 12mm  
Mounting: Threaded bush

**\$4.95**

Cat P-7568  
10 or more \$1.66

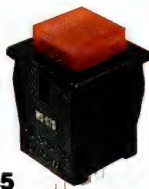


### Illuminated SP Momentary

Rated: 125V AC 1A  
Lamp: 6.3V @ 150mA. Midget Screw  
Cut Out: 18 x 18mm  
Clearance: 33.5mm  
Mounting: Snap Lock

**\$4.95**

Cat P-7556  
10 or more \$4.21



### Illuminated Alternate Action

Rated: 125V AC 3A  
250V AC 1A  
12V @ 55mA T1 Bipin  
Lamp: 12mm diameter  
Cut Out: 40mm  
Clearance: 40mm  
Mounting: Threaded bush  
Red Cat P-7580  
Blue Cat P-7582  
Green Cat P-7584  
Yellow Cat P-7586



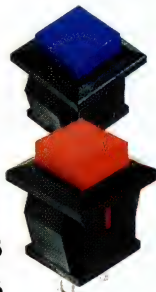
2 = COMMON SWITCHED  
1 = NORMALLY CLOSED  
3 = NORMALLY OPEN  
BOTTOM VIEW +/- = 12V INCANDESCENT LAMP, UNSWITCHED

### SP Momentary Action Push 'On'

Rated: 240V AC 1A  
125V AC 3A  
Overall size: 14.2 x 14.2 x 24.5mm  
Clearance: 19.5mm  
Cut Out: 11 x 12.5mm  
Mounting: Snap Lock  
Blue Cat P-7550  
Red Cat P-7552

**\$4.95**

10 or more \$1.66



### Pack of four!

### Momentary Action Push 'On'

Rated: 35V DC @ 10mA  
Mounting: PCB  
Cut Out: 8mm square  
Pin Size: 0.8mm  
Pin Spacing: On 5mm square

**\$3.95**

Cat P-7570  
10 or more \$3.56



### Momentary Action Push 'On'

Rated: 35V DC @ 10mA  
Mounting: PCB  
Cut Out: 8mm square  
Pin Size: 0.8mm  
Pin Spacing: On 5mm square

**\$4**

Cat P-7572  
10 or more 90¢



### Door Bell Button

Rated: 125V AC @ 3A  
Size: 23 x 77mm  
Mounting: Screw

**\$3.25**

Cat P-7554  
10 or more \$2.93



### SPST Lampswitch

Rated: 240V AC 2A  
Overall size: 13 x 23 x 29mm  
Clearance: 11mm  
Cut Out: 10mm  
Terminals: Screw type  
Mounting: Threaded bush

**\$4.95**

Cat P-7874  
10 or more \$1.66



### DPST Lampswitch

Rated: 240V AC 2A/pole  
Overall size: 23 x 13 x 33mm  
Clearance: 17mm  
Cut Out: 10mm  
Terminals: Screw type  
Mounting: Threaded bush

**\$2.95**

Cat P-7876  
10 or more \$2.51



### Push/Pull Dashboard Switch

Rated: 24V DC @ 10A  
Clearance: 35.5mm  
Cut Out: 10mm diameter  
Terminals: Screw Type  
Mounting: Threaded bush

**\$4.95**

Cat P-7562  
10 or more \$4.21



### Ultramini! SPDT Momentary

Rated: 120V AC @ 1A  
Mounting: Panel  
Overall Size: 9 x 5 x 18mm  
Cut Out: 5mm

**\$2.95**

Cat P-7559  
10 or more \$2.66



### Extra small! SPST Momentary

Rated: 120V AC @ 0.5A  
Mounting: PCB (vert.) or Panel  
Overall size: 7mm (diam.) x 20.6mm long  
Clearance: 13mm  
Cut Out: 5mm  
Pin size: 1mm

**\$4.95**

Cat P-7558  
10 or more \$1.66



### R/angle leads! Ultramini SPDT

Rated: 250V AC @ 1A  
Mounting: PCB (horizontal)  
Overall size: 9 x 5 x 18mm  
Cut Out: 5mm  
Pin size: 0.8mm

**\$2.95**

Cat P-7576  
10 or more \$2.51



## SLIDE SWITCHES

### DPDT Sub-Miniature

Rated: 50V DC @ 0.5A  
Overall size: 23 x 8 x 19mm  
Clearance: 12mm  
Cut Out: 9 x 4.5mm  
Mounting: Screw

**75¢**

Cat P-7610  
10 or more 64¢



### DPDT Sub-Miniature

Rated: 50V DC @ 0.5A  
Overall size: 23 x 8 x 21mm  
Clearance: 12mm  
Cut Out: 9 x 5mm  
Mounting: Screw

**85¢**

Cat P-7612  
10 or more 72¢



### DPDT Miniature

Rated: 125V AC @ 0.5A  
Overall size: 13 x 35 x 26mm  
Clearance: 13mm  
Cut Out: 6 x 13mm  
Mounting: Screw

**\$1.25**

Cat P-7616  
10 or more \$1.06



### DP3T Miniature

Rated: 50V DC @ 0.5A  
Overall size: 8 x 24 x 21mm  
Clearance: 12mm  
Cut Out: 5 x 12mm  
Mounting: Screw

**\$1.30**

Cat P-7614  
10 or more \$1.11





# Switches

## SLIDE SWITCHES CONT'D

### SPDT Slide

Rated: 26V DC @ 6A  
Mounting: PCB  
Overall Size: 13 x 18 x 7mm  
Clearance: 13mm  
Panel Hole: 4 x 8mm  
Cat P-7602



**\$2.95**

10 or more \$2.51

### 3PDT Slide

Rated: 30V DC @ 1A  
Mounting: Screw  
Overall Size: 36 x 19 x 23mm  
Clearance: 12mm  
Panel hole: 6 x 13mm  
Cat P-7604



**\$2.95**

10 or more \$2.51

### 3P3T Slide

Rated: 30V DC @ 0.3A  
Mounting: PCB  
Overall Size: 25 x 10.5 x 27mm  
Clearance: 15mm  
Panel Hole: 6mm x 12mm  
Cat P-7622



**\$2.25**

10 or more \$1.90

## ROCKER SWITCHES

### SPDT Mini Illuminated

Rating: 250V AC @ 6A  
Illumination: 240V Neon  
Overall Size: 15 x 20 x 25mm  
Mounting: Snap Lock  
Clearance: 22mm  
Cut Out: 12.9 x 19.2mm  
Cat P-7703



**\$3.95**

10 or more \$3.36

### SPST Illuminated

Rated: 240V AC @ 15A  
Illumination: 240V Neon  
Overall Size: 14 x 29.8 x 41.2mm  
Mounting: Snap Lock  
Clearance: 33.3mm  
Cut Out: 11.5 x 28.4mm  
Cat P-7705



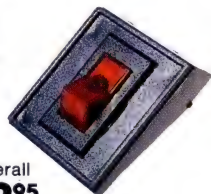
**\$3.95**

10 or more \$3.36

*With bracket!*

### SPST Illuminated

Rated: 250V AC @ 5A  
Illumination: 12V lamp  
Mounting: Snap Lock  
Clearance: 25mm  
Cut Out: 13.5 x 29mm  
(Switch only)  
Bracket Size: 35 x 41mm Overall  
Cat P-7702



**\$2.95**

10 or more \$2.51

### DPST Large Illuminated

Rated: 240V AC @ 15A  
Illumination: 240V Neon  
Overall Size: 22.73 x 30.35 x 33mm  
Mounting: Snap Lock  
Clearance: 31mm  
Cut Out: 27.2 x 22.1mm  
Cat P-7707



**\$4.95**

10 or more \$4.22

### DPDT Large Illuminated

Rated: 240V AC @ 10A  
Illumination: 12V lamp  
Overall Size: 23 x 30.5mm  
Cut Out: 22 x 27mm  
Clearance: 30mm  
Mounting: Snap Lock  
Cat P-7708



**\$4.95 ea**

10 or more \$4.21 ea

### DPST Large Illuminated

Rated: 250V AC @ 10A  
Illumination: 240V Neon  
Overall Size: 25.2 x 31.5 x 30.7mm  
Clearance: 21.4mm  
Mounting: Snap Lock  
Cut Out: 22 x 27.2mm



Red Cat P-7709  
Green Cat P-7710

**\$3.95 ea**

10 or more \$3.36 ea

### DPDT Single Mounting Round Hole

Rated: 250V AC @ 3A  
Overall Size: 20 x 30 x 30.7mm  
Clearance: 15.7mm  
Mounting: Panel  
Cut Out: 17mm (diam.)  
Cat P-7720

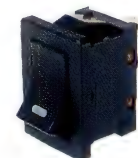


**\$2.95**

10 or more \$2.51

### SPDT Mini

Rating: 12V DC @ 2A  
Overall Size: 15.5 x 21 x 23.5mm  
Mounting: Snap Lock  
Clearance: 17.5mm  
Cut Out: 13 x 19mm  
Cat P-7700



**\$1.95**

10 or more \$1.66

## BANK SWITCHES

### 4-Way DPDT Switch Pack

Rated: 100V AC @ 0.5A  
25V DC @ 1A  
Switch Action: Push Button  
(1 On x 3 Off)  
Cut Out: 11mm holes @ 17.5mm centres  
Clearance: 25mm  
Mounting: Screw/PCB  
Cat P-7750

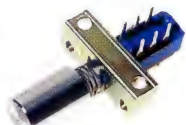


**\$5.95**

10 or more \$5.06

### DPDT Single

Rated: 100V AC @ 0.5A  
25V DC @ 1A  
Switch Action: Push Button  
Cut Out: 11mm diameter  
Clearance: 25mm  
Mounting: Screw/PCB  
Cat P-7752



**\$1.95**

10 or more \$1.66

## MICRO SWITCHES

### SPDT Micro

Rated: 250V AC @ 10A  
Overall Size: 38 x 21 x 10mm  
Mounting: Screw  
Cat P-7800



**\$2.95**

10 or more \$2.51

### SPDT Mini Micro

Rated: 125V AC @ 3A  
Overall Size: 20 x 15 x 7mm  
Mounting: Screw  
Cat P-7802

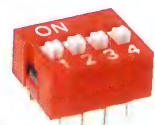


**\$1.95**

10 or more \$1.66

### 4-Way SPST PCB DIP

Rated: 24V DC @ 50mA  
(Make & Break)  
50V DC @ 100mA  
(Steady)  
Overall Size: 11 x 10 x 5mm  
Mounting: PCB  
Cat P-7851

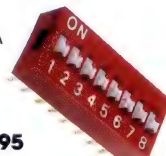


**\$1.95**

10 or more \$1.67

### 8-Way SPST PCB DIL

Rated: 24V DC @ 25mA  
(Make & break)  
50V DC @ 100mA  
(Steady)  
Overall Size: 22 x 16 x 10mm  
Mounting: PCB  
Cat P-7854

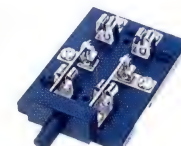


**\$2.95**

10 or more \$2.51

### DPDT Knife Switch

Rated: 50V DC  
Overall Size: 43 x 79 x 20mm  
Body Size: 43 x 60 x 6mm  
Terminals: Screw Type  
Cat P-7862



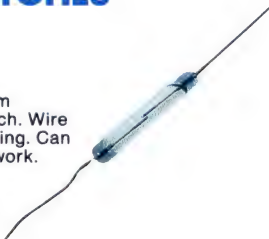
**\$3.95**

10 or more \$3.36

## ALARM SWITCHES

### Mini Reed Switches

Small 25mm long x 5mm diameter magnetic switch. Wire ends suitable for soldering. Can be recessed into woodwork.



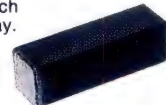
Cat P-7856

**\$1.45**

10 up \$1.27

### Bar Magnets

26 x 8 x 8mm magnet for switching magnetic reed switches, etc. Will operate switch from approximately 10mm away.



Cat L-5214

**\$1.95**

10 or more \$1.25 ea

### Activating Coil

Matches perfectly the mini P-7856 Reed switch. 430 ohm coil operates from 6 - 15V DC. Gives perfect isolation between two circuits.



Cat P-7858

**\$1.35**

5 or more \$1.15

### Mercury 'Tilt' Switch 24V DC 2A

Ideal as a motion detector in car, bike alarms or any low voltage application. Switching is achieved by changing the horizontal plane.

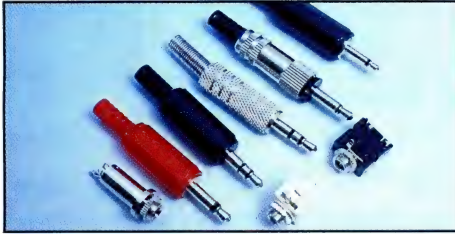


Cat P-7860

**\$3.45**

10 or more \$2.95





## 2.5mm

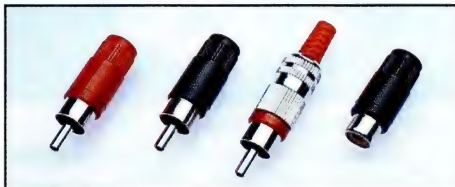
Description	Cat No.	Price
Plug Mono Plastic. In-line	P-1125	65¢
Socket Mono Plastic. In-line	P-1232	75¢
Socket Panel Mono	P-1220	60¢

## 3.5mm.

Description	Cat No.	Price
Plug Metal. Stereo.	P-1145	\$1.75
Plug Metal. Mono	P-1136	\$1.40
Plug Plastic. Stereo.	P-1140	\$1.25
Plug Red. Mono	P-1132	65¢
Plug Black. Mono	P-1134	65¢
Socket Line. Stereo.	P-1238	\$1.50
Socket Mono. Red. Stereo	P-1234	75¢
Socket Mono Black	P-1236	75¢
Socket Panel. Mono	P-1231	75¢
Socket Panel. Stereo.	P-1240	\$1.45
Socket PCB/Chas. Stereo. Enclosed	P-1245	\$1.95

## 6.5mm

Description	Cat No.	Price
Plug Metal. Stereo.	P-1168	\$1.95
Plug Metal. Mono	P-1162	\$1.75
Plug. Stereo	P-1166	\$1.35
Plug Mono	P-1160	\$1.20
Socket Line. Stereo	P-1286	\$1.60
Socket Line. Mono	P-1264	\$1.50
Socket Panel. Mono SPST	P-1261	\$1.45
Socket Pnl. Metal. Stereo. Open	P-1266	\$1.95
Socket Pnl. Encl. DPST Sw. ST	P-1296	\$2.95



## RCA Plugs & Sockets

Description	Cat No.	Price
Plug Metal. Red	P-1424	\$1.95
Plug Metal. Black	P-1426	\$1.95
Plug Plastic. Red	P-1420	65¢
Plug Plastic. Black	P-1422	65¢
Socket Line. Red	P-1410	60¢
Socket Line. Black	P-1412	60¢
Socket Panel. Screw Mnt.	P-1430	80¢
Socket Panel. w/flange.	P-1440	75¢
Socket Panel. 2-way	P-1442	85¢
Socket Panel. 4-way	P-1444	\$1.95
Socket Panel. 6-way	P-1446	\$2.45
Socket R/angle. PCB Mount	P-1435	\$1.25



## 6.5mm Gold Series

Description	Cat No.	Price
Plug Metal. Stereo	P-1167	\$3.65
Plug Metal. Mono	P-1163	\$2.95
Plug R/Angle. Mono.	P-1164	\$4.95



## RCA Gold Series Teflon Insulated

Description	Cat No.	Price
Plug. Metal. Red	P-1425	\$2.95
Plug. Metal. Black	P-1427	\$2.95
Socket line. Red	P-1411	\$2.35
Socket line. Black	P-1413	\$2.35
Socket Bulkhead. Red	P-1431	\$4.95
Socket Bulkhead. Black	P-1432	\$4.95



## Adaptors - Audio

Description	Cat No.	Price
2.5 Plug Mono - 3.5 ST Skt	P-6515	\$1.95
3.5 Plug Stereo. - 2 x 3.5 Sks. ST	P-6525	\$4.95
3.5 Plug ST. - 3.5 Skt. R/angle ST	P-6620	\$4.95
3.5 Plug ST - 3.5 Skt. ST	P-6600	\$1.95
3.5 Plug Mono - RCA Skt.	P-6560	\$1.95
3.5 Plug Mono - 6.5 Mono Skt.	P-6510	\$1.95
3.5 Plug Mono - 6.5 ST Skt.	P-6570	\$1.95
3.5 Plug ST - 6.5mm ST Skt.	P-6505	\$1.95
6.5 Plug ST - 3.5 Mono Skt. R/angle	P-6625	\$4.95
6.5 Plug ST. - 3.5 ST Skt.	P-6500	\$1.95
6.5 Plug Mono - 3.5 Mono Skt.	P-6520	\$1.95
6.5 Plug Mono - 6.5 ST Skt.	P-6580	\$1.95
6.5 Plug Mono - RCA Skt.	P-6530	\$1.95
RCA Plug - 3.5 Skt Mono	P-6540	\$1.95
RCA Plug - 6.5 Skt Mono	P-6550	\$1.95
RCA Socket - 2 x RCA Sockets	P-6610	\$3.95
RCA Socket - RCA Socket	P-6565	\$1.95

\* All sizes in mm ST = Stereo



## Adaptors - Video

Description	Cat No.	Price
BNC Plug - UHF SO-239 Skt.	P-2230	\$4.95
BNC Plug - RCA Socket	P-2250	\$3.95
UHF PL259 Plug - BNC Socket	P-2240	\$4.95
UHF 'TEE' Conn. PL259 - 2x SO239	P-2384	\$6.95
UHF R/angle SO239 - PL259	P-2382	\$5.95
RCA Plug - UHF SO-239 Skt.	P-1455	\$3.95
3.5mm Mono Plug - 75 Ohm Skt.	P-2035	\$2.25
UHF SO-239 - SO-239 Joiner	P-2380	\$2.95
N Plug - SO-239 Skt. Silver plated.	P-2415	\$7.95
N Socket - N Socket Joiner	P-2420	\$6.95
'F' Plug - 75 Ohm Socket	P-2037	\$2.95

**Save 10 to 25% and more!**

Purchase 10 or More of any one type of plug, socket or connector and you'll make a great saving on the individual price. Simply ask the sales staff for details.



## DIN Connectors

Description	Cat No.	Price
2 Pin DIN Line Plug	P-1520	95¢
2 Pin DIN Line Socket	P-1524	95¢
2 Pin DIN Panel Socket	P-1523	75¢
3 Pin DIN Line Plug	P-1530	95¢
5 Pin DIN Line Plug	P-1550	\$1.25
5 Pin DIN Line Socket	P-1554	\$1.35
5 Pin DIN Panel Socket	P-1552	\$1.25
6 Pin DIN Line Plug	P-1560	\$1.55
6 Pin DIN Line Socket	P-1564	\$1.80
6 Pin DIN Panel Socket	P-1562	\$1.60
7 Pin DIN Line Plug	P-1561	\$1.65
7 Pin DIN Line Socket	P-1563	\$1.95
7 Pin DIN Panel Socket	P-1565	\$1.95
8 Pin DIN Line Plug	P-1571	\$1.95
8 Pin DIN Line Socket	P-1573	\$1.95
8 Pin DIN Panel Socket	P-1575	\$2.25



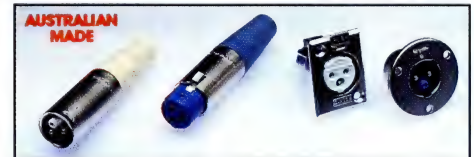
## Low Level Audio, Alcatel (Cannon)

Description	Cat No.	Price
Plug In-line AXR-3-12R	P-1624	\$5.50
Socket In-Line AXR-3-11	P-1620	\$5.95
Plug Panel Mount AXR-3-32	P-1622	\$4.50
Socket Panel Mount AXR-3-31	P-1626	\$6.95



## Coloured Boots, Alcatel (Cannon)

Description	Cat No.	Price
Orange Boot - Suits all	P-1615	95¢
Yellow Boot "	P-1616	95¢
Green Boot "	P-1617	95¢
Blue/Violet Boot "	P-1618	95¢



## High Level Audio, Alcatel (Cannon)

Description	Cat No.	Price
Line Plug AXR-PDN-12W	P-1632	\$10.95
Line Socket AXR-PDN-11B	P-1634	\$10.75
Panel Plug AXR-PDN-14B	P-1638	\$9.95
Panel Socket AXR-PDN-31W	P-1636	\$9.95



## Mains Rated (240V), Alcatel (Cannon)

Description	Cat No.	Price
Line Plug AXR-LNE-12	P-1627	\$10.95
Line Socket AXR-LNE-11	P-1631	\$10.95
Panel Plug AXR-LNE-32	P-1629	\$9.95
Panel Socket AXR-LNE-31	P-1630	\$9.95



# Plugs & Sockets

## AUDIO Cont'd

### Banana Plugs - 4mm



#### Standard

Red	P-1710	
Black	P-1712	
Yellow	P-1714	<b>75¢ ea.</b>
Green	P-1716	10 or more 65¢ ea.

#### Standard Piggy-Back

Red	P-1740	
Black	P-1741	
Yellow	P-1742	<b>\$1.35 ea.</b>
Green	P-1743	10 or more 99¢ ea.

#### High Quality Piggy-Back

Red	P-1711	
Black	P-1713	
Yellow	P-1715	<b>\$1.45 ea.</b>
Green	P-1717	10 or more \$1.27 ea.

### Banana Sockets - 4mm



#### Sockets Plain

Red	P-1720	
Black	P-1722	
Yellow	P-1724	<b>75¢ ea.</b>
Green	P-1726	10 or more 65¢ ea.

#### Sockets with Binding Post

Red	P-1730	
Black	P-1732	
Yellow	P-1734	<b>\$1.45 ea.</b>
Green	P-1736	10 or more \$1.25 ea.

#### Sockets Large with Binding Post

Red	P-1731	<b>\$1.65 ea.</b>
Black	P-1733	10 or more \$1.40 ea.

#### Sockets, High Quality with Binding Post

Red	P-1737	<b>\$1.95 ea.</b>
Black	P-1738	10 or more \$1.70 ea.

## POWER



### DC Plugs, Sockets & Adaptors

1.3mm Plug	P-1643	<b>\$1.35</b>
1.3mm Plug - 2.1mm Socket	P-6591	<b>\$1.95</b>
2.1mm Plug. Short shaft	P-1641	<b>95c</b>
2.1mm Plug. Long shaft	P-1642	<b>95c</b>
2.1mm Line Socket	P-1653	<b>\$1.95</b>
2.1mm Socket. Panel	P-1661	<b>\$1.25</b>

2.1mm Skt. Single Hole. Pnl  
2.1mm Socket - 2.5mm Plug  
2.5mm Plug. Short shaft  
2.5mm Plug. Long shaft  
2.5mm Line Socket  
2.5mm Socket Pnl. Switch Type  
2.5mm Skt. Single Hole. Pnl  
2.5mm Plug - 3.5mm Plug  
2.5mm Socket - 3.5mm Plug  
2.5mm Socket - 2.1mm Plug

P-1648	<b>\$1.95</b>
P-6599	<b>\$1.95</b>
P-1645	<b>95c</b>
P-1646	<b>95c</b>
P-1655	<b>\$1.95</b>
P-1666	<b>\$1.25</b>
P-1650	<b>\$1.95</b>
P-6595	<b>\$1.95</b>
P-6593	<b>\$1.95</b>
P-6598	<b>\$1.95</b>

## AUTOMOTIVE



### Power Adaptors

Cig Lighter Adap. With 4-way star plug Reversible Polarity  
Line Socket Cig Lighter Plug. Cig lighter  
Twin Lighter Sockets. Fused

P-1682	<b>\$5.95</b>
P-1677	<b>\$2.35</b>
P-1675	<b>\$1.35</b>
P-1678	<b>\$5.95</b>

## RF



### UHF Coax Connectors

Plug Line PL259. Suits RG8/U Cable  
Plug Line PL259. Suits RG58U Cable  
Skt Pnl SO239. Single Mnt.  
Socket Panel SO239. Flange Mount.  
Adaptor for 50ohm Coax. Use w/PL259  
TNC Line Plug. Solder & Clamp RG58/U for cellular Phones  
Line Socket SO239

P-2310	<b>\$2.95</b>
P-2311	<b>\$2.95</b>
P-2342	<b>\$2.75</b>
P-2340	<b>\$2.95</b>
P-2360	<b>95c</b>
P-2390	<b>\$3.95</b>
P-2320	<b>\$6.95</b>



### BNC Connectors

Plug. Suits RG58RU. Solder Type  
Plug. Suits RG58/9. Solderless.  
Plug. Suits RG213U.  
Socket Panel. Common Ground

P-2210	<b>\$2.95</b>
P-2212	<b>\$3.65</b>
P-2260	<b>\$5.95</b>
P-2220	<b>\$2.95</b>

Line Socket. Solderless  
Socket Panel. Isolated ground.

P-2225	<b>\$3.95</b>
P-2215	<b>\$3.95</b>



### N Connectors (silver plated)

Plug Line. Suits RG213 cable  
Plug Line. Suits RG58 cable  
Socket Panel Mount

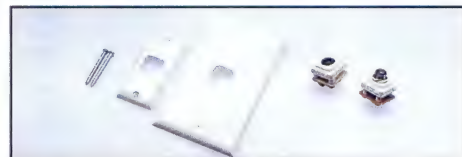
P-2400	<b>\$8.95</b>
P-2401	<b>\$8.95</b>
P-2410	<b>\$4.95</b>



### RF Adaptors

N Plug - SO239 Socket. Silver plated P-2415	<b>\$7.95</b>
N Socket - N Socket Joiner P-2420	<b>\$6.95</b>
TEE Connector. PL-259 - 2 x SO239 P-2384	<b>\$6.95</b>
R/Angle Connector. SO239 - PL-259 P-2382	<b>\$5.95</b>
SO239 Straight Joiner P-2380	<b>\$2.95</b>
RCA Plug - UHF SO239 socket P-1455	<b>\$3.95</b>
75 Ohm Coax Socket - 3.5mm Plug P-2035	<b>\$2.95</b>

## RADIO/TV/VIDEO, ETC



### Modular Antenna System

#### Wall Plates:

Large	P-2053	<b>\$3.65</b>
Architrave (Small)	P-2051	<b>\$2.95</b>

#### Inserts:

300 Ohm Socket	P-2056	<b>\$2.95</b>
75 Ohm Socket	P-2054	<b>\$2.95</b>



### Wall Sockets - 75 Ohm

Wall Plate with Coax Socket	P-2042	<b>\$5.95</b>
Surface Mount with Coax Socket	P-2044	<b>\$3.95</b>



### 300 Ohm

Line Plug & Socket. Screw type	P-2086	<b>\$3.95</b>
Wall Socket. Surface Mount	P-2081	<b>\$1.95</b>
Plug. Screw type	P-2084	<b>\$1.95</b>
Plug. Solder/Crimp Type	P-2082	<b>\$1.95</b>
TV Wall Plate	P-2060	<b>\$3.95</b>

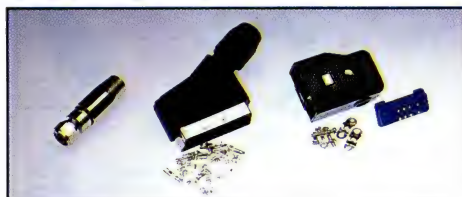


### 75 Ohm

Plug Metal. Solderless	P-2020	<b>\$1.95</b>
Socket Line. Metal Solderless	P-2030	<b>\$1.95</b>
Plug Plastic. Solderless	P-2021	<b>\$1.45</b>
Plug R/angle. Solderless	P-2023	<b>\$1.95</b>
Socket Line. Plastic Solderless	P-2031	<b>\$1.45</b>
Socket. Panel Mount.	P-2040	<b>\$1.35</b>

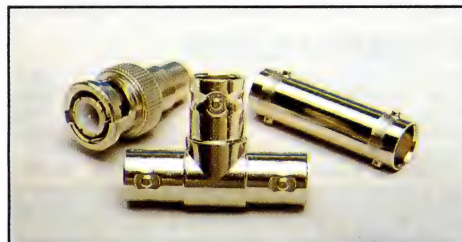


## RADIO/TV/VIDEO Cont.



### General

'F' plug to suit RG-11U (Satellite)	P-2010	9.95
SKART Plug - 24 pin video	P-2005	4.95
Car radio ant. plug. Solderless	P-2001	2.15
Car radio ant. skt. Line Solderless	P-2002	2.15
Car Radio ant. skt. Pnl mnt	P-2004	95c
RGB Monitor Plug. 8 pin.	P-2682	7.95



### BNC Adaptors

BNC Socket - BNC Socket	P-2265	3.95
BNC 'T' Adaptor. Female	P-2275	5.95
BNC Plug - SO239 Socket.	P-2230	4.95
BNC Socket - PL259 Plug	P-2240	4.95
BNC Plug - RCA Socket	P-2250	3.95
BNC Socket - RCA Plug	P-2255	4.95



### Coax In-Line Joiners

In-line Joiner. Fem/Fem. Plug-in	P-2070	1.95
In-line Joiner. Male/Male Plug-in	P-2072	1.95
In-line Joiner. Screw type.	P-2075	1.95

## COMPUTER



### 'D' Connectors

#### 9-PIN

9 Pin 'D' Plug. IDC. Flat ribbon.	P-2699	6.95
9 Pin 'D' Socket IDC "	P-2700	6.95
9 Pin 'D' Skt. R/angle PCB Mnt	P-2683	3.95
9 Pin 'D' Plug. Solder tail.	P-2684	2.95
9 Pin 'D' Socket. Solder tail.	P-2685	3.50
9 Pin Backshell W/Jacket. Screw type.	P-2686	2.35

#### 13-PIN

13 Pin DIN Line Plug. Suits Atari	P-1569	2.95
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#### 15-PIN

15-Pin IDC 'D' Plug. Flat Ribbon	P-2701	7.50
15-Pin IDC 'D' Socket. "	P-2702	7.50
15-Pin Plug. High Density Sub-D	P-2710	3.95
15-Pin Plug. Solder Tail.	P-2687	3.50
15-Pin Socket. Solder Tail.	P-2688	3.95
15-Pin Socket. High Density	P-2711	4.25
15-Pin Backshell. w/Jacket.	P-2689	2.65

#### 23-PIN

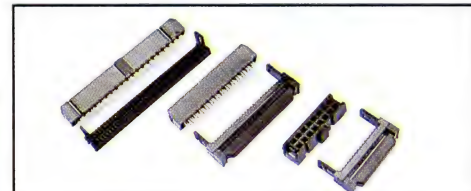
23-Pin Plug. Solder Tail.	P-2696	3.95
23-Pin Socket. Solder Tail.	P-2697	3.95
23-Pin Backshell. w/Jacket. Scr.type	P-2698	2.75

#### 25-PIN

25-Pin Plug. IDC 'D' Flat Ribbon	P-2693	7.95
25-Pin Socket. IDC 'D' "	P-2694	7.95
25-Pin Skt. R/angle. PCB Mnt	P-2695	6.95
25-Pin Plug. Solder Tail.	P-2690	2.95
25-Pin Socket. Solder Tail.	P-2691	2.95
25-Pin Backshell. w/Jacket. Scr.type	P-2692	2.95
Hex Ext. nuts for 'D' connectors 2 pack	P-2724	65c
Jack Skt. for D connectors 2 pack	P-2725	1.95

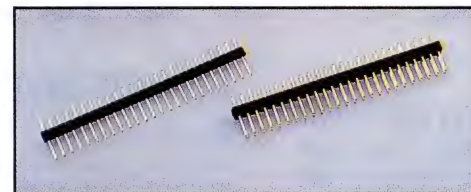
### 36-Way Centronics

36-Pin Plug. Line.	P-2680	5.95
36-Pin Socket. Panel.	P-2681	6.95
36-Pin Plug. IDC	P-2678	7.95



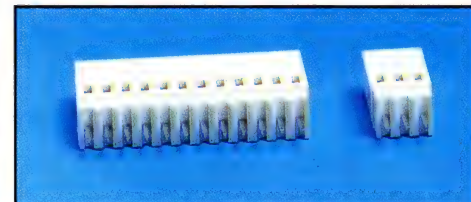
### IDC Sockets

16-Way DIL	P-2744	2.95
20-Way DIL	P-2746	3.10
26-Way DIL	P-2748	3.25
34-Way DIL	P-2750	3.50
34-Way IDC Card Edge Conn.	P-2760	4.95
40-Way DIL	P-2752	3.95
50-Way DIL	P-2754	4.95



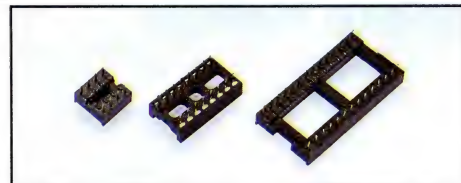
### Snap-Off Pin Headers

25-Way SIL Snap Off.	P-2726	2.95
50-Way DIL Snap Off.	P-2728	3.95



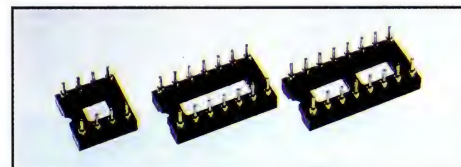
### Locking Pin/Plug Headers

Jumper Shunts. Gold. Pk of 5	P-2730	1.95
2-Way SIL Pin Header & Plug	P-2731	95c
3-Way SIL Pin Header & Plug	P-2733	1.10
12-Way SIL Pin Header & Plug	P-2735	2.95



### IC Sockets, Dual Wipe

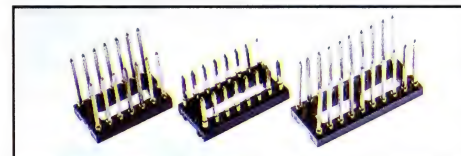
8 Pin DIL Socket	P-4080	25c
14 Pin DIL Socket	P-4140	30c
16 Pin DIL Socket	P-4160	35c
18 Pin DIL Socket	P-4180	40c
20 Pin DIL Socket	P-4200	45c
22 Pin DIL Socket	P-4220	50c
24 Pin DIL Socket	P-4240	65c
28 Pin DIL Socket	P-4245	70c
40 Pin DIL Socket	P-4250	75c



Premium Quality!

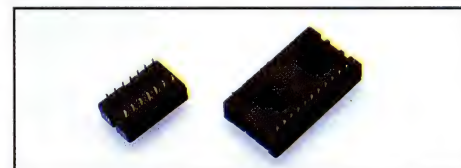
### Machine Pin IC Sockets

8 Pin Socket. DIL Gold	P-4081	1.10
14 Pin Socket. DIL Gold.	P-4141	1.50
16 Pin Socket. DIL Gold.	P-4161	1.75
32 Pin Skt Strip. Snap-off Gold.	P-4300	4.50



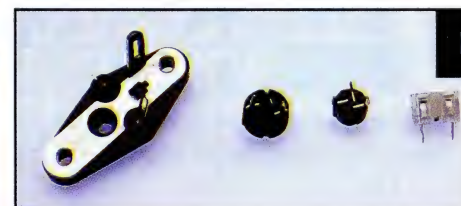
### Wirewrap IC Sockets

14 Pin DIL Socket	P-4260	2.95
16 Pin DIL Socket	P-4262	3.95
20 Pin DIL Socket	P-4264	4.25
24 Pin DIL Socket	P-4268	4.95



### IC Plugs/Component Headers

16 Pin IDC DIL Plug	P-4162	2.95
24 Pin IDC DIL Plug	P-4242	3.95
14 Pin DIL Header Plug. Solder type	P-4144	3.50
16 Pin DIL Header Plug. Solder type	P-4164	3.75



### Transistor/ Crystal Sockets

TO-3 Socket.	P-4023	3.50
TO-5 Socket.	P-4015	1.95
TO-18 Socket.	P-4018	1.65
IC Socket Pins. Pack 100.	P-4504	3.95
Crystal Socket. Type K (Small)	P-4720	95c



# Plugs & Sockets

## GENERAL PURPOSE



### Nylon Plugs & Sockets

Nylon plugs and sockets in various configurations suitable for automotive, radio control applications, etc. Quality connectors which are supplied complete with pins.

2-Way Plug & Socket	P-5102	\$2.15
3-Way Plug & Socket	P-5103	\$2.85
4-Way Plug & Socket	P-5105	\$3.25
6-Way Plug & Socket	P-5106	\$3.95
9-Way Plug & Socket	P-5109	\$4.65
12-Way Plug & Socket	P-5112	\$4.85
15-Way Plug & Socket	P-5115	\$4.95
Spare Pins to suit. Pk of 6M & 6F	P-5100	\$2.95



### Mic Plugs & Sockets

2 Pole Plug. Panel Mount	P-1820	\$3.95
2 Pole Line Socket to suit	P-1832	\$3.95
4 Pole Plug. Panel Mount	P-1824	\$3.95
4 Pole Line Socket to suit	P-1834	\$3.95
8 Pole Plug Panel Mount	P-1826	\$5.95
8 Pole Line Socket to suit	P-1836	\$5.95



### Multi-Pin

2 Pin Line Plug	P-3110	\$1.95
2 Pin Chassis Socket	P-3115	\$1.75
5 Pin Line Plug	P-3125	\$2.50
5 Pin Chassis Socket	P-3135	\$2.50
8 Pin Line Plug	P-3010	\$3.95
8 Pin Chassis Socket	P-3025	\$3.95
Cover To Suit P-3125	P-3140	\$1.25



### Terminals/Tag Strips

3 Lug.	P-4800	75c
5 Lug.	P-4802	95c
7 Lug.	P-4804	\$1.25



### Spring-Loaded Speaker Terminals

Positive action, captive terminals with pushbutton release. Colour coded red & black.

2-pole Rectangular	P-1764	\$1.40
2-pole Round	P-1763	\$2.50
4-Pole Rectangular	P-1765	\$2.40



### Screw Terminals

#### Barrier Type

4-Pole	P-4810	\$3.95
8-Pole	P-4812	\$6.50
12-Pole	P-4814	\$8.95

#### Terminal Blocks 240V

2-Pole PCB Mount 5mm LS	P-4820	\$1.25
3-Pole PCB Mount 5mm LS	P-4822	\$1.55
3-Pole PCB Mount 10mm LS	P-4834	\$2.95
12-Pole Block 240V Large	P-4850	\$1.95
12-Pole Block 240V Small	P-4855	\$1.95

#### Screw Strips

2-Pole	P-4860	\$1.25
4-Pole	P-4862	\$1.95
6-Pole	P-4864	\$2.95



### Battery Clips

Battery terminal Clip. 30A Red	P-6420	\$1.35
Battery terminal Clip. 30A Black	P-6422	\$1.35
Crocodile Battery Clip. 20A Red	P-6416	\$1.95
Crocodile Battery Clip. 20A Black	P-6418	\$1.95



### Alligator Clips

Small. Insulated. Red	P-6400	65c
Small. Insulated. Black	P-6402	65c
Medium. Insul. Red	P-6404	75c
Medium. Insul. Black	P-6406	75c
Alligator Clip to Banana Skt. Red	P-6408	\$1.45
Alligator Clip to Banana Skt. Black	P-6410	\$1.45



### Test Clips

Large Hook Type. Red	P-6458	\$3.95
Large Hook Type. Black	P-6460	\$3.95
Medium Hook Type. Red	P-6454	\$1.35
Medium Hook Type. Black	P-6456	\$1.35
Small Hook Type. Red	P-6450	\$1.20
Small Hook Type. Black	P-6452	\$1.20
16 Pin IC Peg style	P-6470	\$9.95

**Save 10 To 25%  
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## MANUFACTURER'S NOTE

### Bulk Prices

If you're not dealing through Dick Smith Wholesale you're probably missing one of the most valuable sources for your parts and components in the country. We not only stock a comprehensive range of parts and components but we offer exceptional value for bulk buys. Ask us for a quote... today!

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What's more, when you deal with Dick Smith Wholesale you know you're being looked after by one of the most respected names in the business, so you can rest assured that your source is reliable and won't let you down.

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We have a broad range of components and parts in stock at all times. So if your production is being held up through unreliable suppliers, why not let us keep you on schedule and quote on your next project?



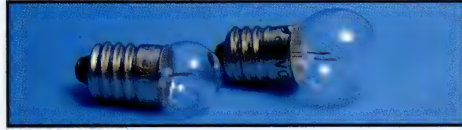
## LAMPS



### Heavy Duty Torch Bulbs

Standard flange fit heavy duty torch globes. In blister pack of two. **\$2<sup>25</sup>/pk.**

**4.8 Volt @ 0.7A** Cat S-3965 **2.4 Volt @ 0.5A** Cat S-3967  
**3.6 Volt @ 0.5A** Cat S-3966



### Heavy duty Screw Type Torch Globes

Heavy duty screw type torch globes in handy packs of two. **\$2<sup>25</sup> pk.**

**6.2V @ 0.3A** Cat S-3946 **2.3V @ 0.27A** Cat S-3948  
**2.5V @ 0.3A** Cat S-3947 **2.3V @ 0.25A** Cat S-3949



### Halogen Torch Bulbs

Standard captive fittings. Note: Halogen Bulbs operate at higher temperatures and should only be used in torches designed for their use!

**2.8V @ 0.85A** **5.5V @ 1.0A**  
**2.8V @ 0.85A** **5.5V @ 1.0A**  
Use with 2 x 'D' size batteries.  
Cat S-3950

**4.0V @ 0.85A** **5.5V @ 1.0A**  
**4.0V @ 0.85A** **5.5V @ 1.0A**  
Use with 3 x 'D' size batteries. Cat S-3955



### Krypton Globes

Higher performance, extra bright Krypton globes to suit most torches, lanterns, etc. Standard flange fit. **\$1<sup>95</sup> ea.**

**2.4V @ 0.7A** Cat S-3961 **4.8V @ 0.75A** Cat S-3963  
**3.6V @ 0.75A** Cat S-3962 **7.2V @ 0.7A** Cat S-3964



### MES Socket

With mounting slot. Solder type. To suit standard MES Bulbs below. Cat P-8162 **\$1<sup>25</sup>**  
10 or more **\$1.10 ea.**

### MES Socket

MES socket with round base and screw terminals. Cat P-8161 **\$1<sup>25</sup>**  
10 or more **\$1.10**

### MES Bulbs

Miniature Edison Screw (MES) Bulbs for dial lamps, etc. **65¢ ea**  
10 or more **55¢ ea**

**6.3V @ 0.15A** **12V @ 300mA**  
Cat P-8150 Cat P-8152

### 12V Short LES Globe

12V LES (Lilliput Edison Screw) globe. Suits 12V Bezels (P-8050/56) Cat P-8159 **95¢**  
10 or more **80¢ ea**

### 12V Long LES Globe

Suits Bezels P-8100/2 **95¢**  
Cat P-8155 10 or more **80¢ ea** **NEW '93**



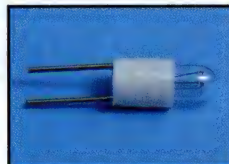
### 12V 5mm Grain Of Wheat Globe

Rated at 12V 50mA. With pigtail leads. Cat P-8140 **95¢**  
10 or more **80¢ ea.**



### Miniature Pilot Globe

3mm 12V 50mA, with flying leads Cat P-8130 **\$1<sup>95</sup>** **NEW '93**



### 12V Miniature Bipin Bulb

Suitable for many car alarm warning lights as well as our illuminated switches (P-7580/82/84/86), etc. Cat P-8158 **\$2<sup>45</sup>**  
10 or more **\$2.15 ea**

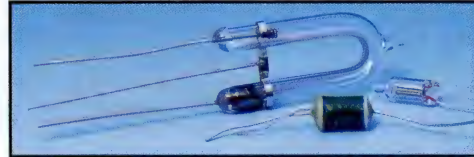


### Bayonet Cap! 240V Decorative Globes

To suit standard bayonet cap light fittings. 240 volt, 25 amps. Ideal for party lights, decoration, etc.

Description	Cat No.	Price \$
Yellow	S-3837	2.25
Red	S-3838	2.25
Blue	S-3839	2.25
Green	S-3840	2.25
Orange	S-3841	2.25
Blacklite (UV)	S-3900	9.95

We carry a wide range of household light globes. Check out our big range and competitive prices.



### Neons

Small pigtail type neon bulb as used in indicators, timing circuits, etc. Striking voltage 70 - 90 volts @ 600uA. For 240 volt use 240K 1/4W resistor. Cat P- 8160 **75¢** 10 or more **64¢ ea**

### Xenon Flashtube

As used in strobes, safety applications, photographic work, etc. Operates from 200-400 volts (300V nominal) with trigger transformer (below). 5 watts maximum input. Cat P-8164 **\$3<sup>95</sup>** 5 or more **\$3.35**

### Trigger Transformer

6K trigger transformer to suit flashtube above. 250V primary, 6kV secondary. Cat M-0104 **\$1<sup>50</sup>**

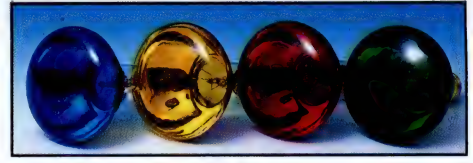
## FLOODLAMPS



### PAR 38 Coloured Bulbs

High quality pressed glass with internal reflector. Rated at 240V, 100 watts. Edison screw (ES) fitting.

Description	Cat No	Price
Yellow	S-3850	\$13.95
Red	S-3852	\$13.95
Blue	S-3854	\$13.95
Green	S-3856	\$13.95
Clear (120W)	S-3859	\$9.95



### R95 Reflector Lamps

Ideal for display, party, warning lights, etc. 240V @ 100 watts with ES (Edison Screw) base.

Yellow Cat S-3851  
Red Cat S-3853  
Blue Cat S-3855  
Green Cat S-3857

**\$10<sup>95</sup> ea.**

### Magnifying Work Lamp

Just the thing for working on PCB's, jewellery, models... anything small. This sturdy Argus worklamp has a magnifying glass which lets you get a close look at what's going on. It has a heavy duty base, full radial movement and spring loaded adjustable arms... so you can get just the right working angle. 240 volt operated. A must for the workshop.



Cat S-4001 **\$109**

Globes to suit S-4001. Cat S-3968 **\$3<sup>95</sup>**

## BEZELS

### 12V Bezel

12 volt AC or DC. Supplied with 12V LES bulb. Chrome plated body with coloured plastic lens. Requires 11mm mounting hole.

Red Cat P-8100 **\$2<sup>65</sup>**  
Green Cat P-8102 **ea.**



Replacement Globe to suit. Cat P-8155 **95¢**

### Miniature Coloured Bezels

Red Cat P-8050  
Green Cat P-8052  
Amber Cat P-8054  
Blue Cat P-8056

**\$2<sup>35</sup> ea** **NEW '93**



Replacement Globe: Cat P-8159 **95¢**

### LED Bezel

High visibility with low current drain (20mA @ 2V). Chrome finish. Requires 8mm panel hole.

Red Cat P-8104  
Green Cat P-8106



**\$1<sup>95</sup> ea**  
5 or more **\$1.65 ea**

### High Intensity LED Bezel

A water-clear green LED Bezel with a light output of 300mcd. It's rated 20mA @ 2.4V, 100mW. Finished in hard wearing chrome, it requires an 8mm mounting hole. Cat P-8107



**\$2<sup>95</sup>**  
5 or more **\$2.50**

### Dual Colour LED Bezel

Red and green in one! Ideal for two state indication (on/off, etc). 8mm mounting hole. Operates on 1.3 - 1.5V @ 25 - 30mA. Cat P-8108



**\$4<sup>95</sup>**  
5 or more **\$4.20**

### Neon Bezel

90 volt neon bezel gives a soft coloured glow. Ideal for mains power projects, etc.... NB: 270K resistor in series required for 240VAC. 7mm mounting hole. Cat P-8112



**\$2<sup>45</sup>**  
5 or more **\$2.10 ea**

### LED Mounting Bezels

Self-locking black bezels to suit standard 5mm LEDs. They can make your projects look great. In packs of 15. Cat H-1910



**\$4<sup>95</sup>/pk.**  
10 or more **\$1.75**



# Fuses & Chokes

## FUSES

### Fast Blow Fuses

#### 5AG Type: 38 x 10mm

10A 32V	Cat P-7886
15A 32V	Cat P-7888
20A 32V	Cat P-7890
25A 32V	Cat P-7892
30A 32V	Cat P-7894



\$1.95 ea

#### 3AG Type: 32 x 6mm

100mA	Cat P-7950
150mA	Cat P-7952
250mA	Cat P-7954
350mA	Cat P-7956
500mA	Cat P-7958
1A	Cat P-7960
1.5A	Cat P-7962
2A	Cat P-7964
3A	Cat P-7966
5A	Cat P-7968
7.5A	Cat P-7970
10A	Cat P-7972
15A	Cat P-7974
20A	Cat P-7976
25A	Cat P-7978
30A	Cat P-7980
35A	Cat P-7982



35¢ ea  
10 or more, 21¢ ea

#### M-205 Type: 20 x 5mm

125mA	Cat P-7939
200mA	Cat P-7929
250mA	Cat P-7930
315mA	Cat P-7931
500mA	Cat P-7932
750mA	Cat P-7933
1A	Cat P-7934
1.25A	Cat P-7935
2.5A	Cat P-7937
2A	Cat P-7936
5A	Cat P-7938



30¢ ea  
10 or more, 21¢ ea

### Slo Blo Fuses

#### 3AG Type - 32 x 6mm

250mA	Cat P-7940
500mA	Cat P-7942
1A	Cat P-7944
2A	Cat P-7946
5A	Cat P-7948



#### M-205 Type - 20 x 5mm

250mA	Cat P-7920
315mA	Cat P-7922
500mA	Cat P-7924
1A	Cat P-7926
2A	Cat P-7928



10 or more, \$1.02 ea

### Thermal Fuses

Rated 250V @ 10A.

96° CELSIUS Cat P-7984

139° CELSIUS Cat P-7986

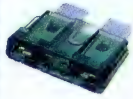
10 or more \$1.85



\$2.15 ea

### Auto Blade Fuses

5A	Cat P-7988
7.5A	Cat P-7990
10A	Cat P-7992
15A	Cat P-7994
20A	Cat P-7996
25A	Cat P-7998
30A	Cat P-7999



10 or more 43¢ ea

60¢ ea

### Handy pack! Fuse Wire

Keep one in the fuse box in case of emergency! Card has 8, 16, 20 and 30 amp wire.

Cat W-3180 \$1.95/pk



### Circuit Breakers

No wire to change! Just slip them in place of your old fuse. If the circuit is tripped, all you do is push the button to restore power.

8 amp	Cat M-7282
16 amp	Cat M-7284
20 amp	Cat M-7286
32 amp	Cat M-7288

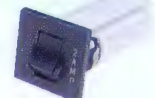
\$12.95 ea



## Mini Circuit Breakers

Panel mount mini circuit breakers are a quick and convenient alternative to the clumsy fuses found in most equipment. All are rated at 32V DC, 250V AC. They require a 6.35mm mounting hole (max. panel thickness 1.574mm). Snap lock fitting. Quick connect terminals, soldering is not recommended.

1A	Cat P-8201
2A	Cat P-8202
3A	Cat P-8203
5A	Cat P-8205
7A	Cat P-8207
10A	Cat P-8210



\$6.95 ea

## FUSE HOLDERS

### Panel Mount

#### 3AG Push-In Fuseholder

Can be panel or chassis mounted. Simple push-in fuse fitting. 17mm square face. Requires 13.5mm mounting hole.

Cat P-7900 \$1.95

10 or more, \$1.66



### Screw-In Fuseholder

Suitable for panel or chassis mount. Raised screw top for easy fuse fitting. Requires 13.5mm mounting hole.

#### 3AG Type

Cat P-7902 \$1.65

10 or more, \$1.19

#### M-205 Type

Cat P-7918 \$1.25

10 or more, 94¢



### Fingerproof!

### Bayonet Fuseholders

They're designed for safety... so it's almost impossible to touch the 240V with your fingers. However, the fuse carrier can easily be removed with a screwdriver.

#### 3AG Type

Cat P-7916 \$3.95 ea

#### M-205 Type

Cat P-7914 \$3.55 ea

5 or more \$3.55 ea



### 5AG Fuse Holder

Quality high voltage, high current panel mount fuse holder for 5AG fuses. Rated at 600V, 30A. 22mm mounting hole. Securing bolts require 33mm centres.

Cat P-7915 \$5.95



## In-Line

### 3AG In-Line Holders

Ideal for car radios, transceivers, etc.... any low voltage application. Takes standard 3AG fuses. Comes with 600mm lead.

Cat P-7912 \$1.45

10 or more \$1.23



### Heavy Duty 3AG In-Line Holder

Low voltage, high current, heavy duty in-line fuse holder that's ideal for automotive work or any high current application. Rated at 12V, 20A with 100mm leads.

Cat P-7913 \$2.15



10 or more \$1.83

## Waterproof 3AG In-line Holder

Extra high quality in-line fuse holders which are ideal for marine, industrial, automotive applications, etc. They're incredibly robust and will withstand shock, vibration, water, UV light, extreme temperatures and many organic solvents. Rated at 32V, 30 amps.

Cat P-7917 \$5.95

5 or more \$5.35



## Clip Holders

Suitable for chassis or PCB mounting. Sizes to suit both fuse types.

3AG Type Cat P-7908

10 or more, 80¢



M-205 Type Cat P-7910

10 or more, \$1.05

## 3AG Fuse Clips

In pack of 8. Ideal for PCB mounting.



10 or more pks.

\$1.67/pk

H-1700 \$1.95 /pk

## Fluke Fuses

Looking for fuses for your Fluke Meter? You'll find them on Page 128

## COIL FORMERS & ACCESSORIES



### Former

4.83mm O.D. phenolic former with 14mm (max) winding height. Threaded to accept 4mm ferrite cores.

10 or more 64¢

### 6 Pin Base

To suit above former.

10 or more 64¢

### Can

Tinned copper screening can to suit above former and base. 12.7mm (w) x 13.4mm (d) x 17.8mm (h).

10 or more 72¢

Cat R-5020

75¢ ea

Cat R-5010

75¢ ea

Cat R-5000

85¢ ea

## FERRITE CORES



### F29 Cores

Pack of four ferrite screw cores to suit above formers. 10mm (long) x 4mm (diam). 0.5mm thread pitch. F29 material for 10-220MHz operation. ui=12.

Cat R-5030 \$1.95/pk

10pks or more \$1.65/pk

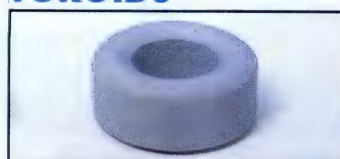
### F16 Cores

Pack of four ferrite screw cores to suit above formers. 10mm (long) x 4mm (diam). 0.5mm thread pitch. F16 material for 0.5-15MHz operation. ui=125.

Cat R-5025 \$1.95/pk

10 pks or more \$1.65/pk

## TOROIDS



### Iron Powder Toroid

Medium permeability iron powder ring suitable for EMI suppression chokes in triac circuits, etc. 14.8mm OD x 8mm ID x 6.35mm high. AL approximately 45nH.

Cat R-5410 \$2.95

5 or more \$2.05

## FERRITE BEADS



Normally threaded on wire leads, these beads provide a series impedance above normal operating frequencies, reducing EMI radiation and spurious effects arising from unwanted RF pickup. Series impedance can be increased by using extra beads, or by winding several turns through one bead. Also usable as cores for pulse and wideband transformers.

### Single Hole - Low Frequency

Single hole bead using F8 material for low frequency use. 4mm OD x 2mm ID x 5mm long.

Cat R-5420 \$5.5¢ ea

10 or more 46¢

### Single Hole - High Frequency

Single hole bead using F29 material for HF/VHF suppression. 4mm OD x 2mm ID x 5mm long.

Cat R-5425 \$5.5¢ ea

10 or more 46¢

### 6 Hole Bead

6 hole bead using F14 material suitable for HF/VHF suppression. 6mm OD x 10mm long. 0.9mm holes.

Cat R-5430 \$7.5¢ ea

10 or more 63¢

## BALUN FORMERS



Suitable for VHF (F14) and VHF/UHF (F29) TV baluns, wideband and pulse transformers, interference suppression, etc. F29 ferrite has 0.5dB loss @ 40 - 220MHz increasing to 1dB @ 800MHz. Packs or two baluns in two sizes.

### F14 Ferrites

1050/1/F14. 13.5mm x 13.2mm x 7.4mm. In pack of two.

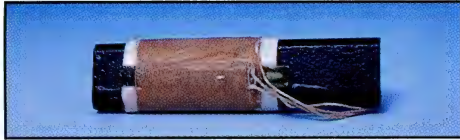
Cat R-5440 \$1.75/pk

### F29 Ferrites

1050/2/F29. 6.5mm x 13.2mm x 7.4mm. In pack of two.

Cat R-5445 \$1.75/pk





## Aerial Rod With Coil

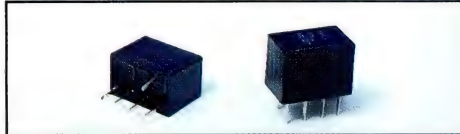
Ferrite rod complete with pre-wound standard b/c coil. Suits 140 - 160pF miniature tuning gangs.

Cat R-5100 **\$1.75**  
5 or more **\$1.49**

## Aerial Rods

F14 grade ferrite rod suitable for LW & MW antenna coils. Ideal for new designs, as a replacement in larger transistor radios or for noise suppression. 194mm(l) x 9mm (diam).

Cat R-5105 **\$3.95**  
5 or more **\$3.36**



## 455kHz Ceramic Filter

Murata (CFW455E) used as replacement for IF transformers.

Maximum selectivity with a flat response.

Selectivity (typical): 20dB @ +/- 10kHz

Bandwidth: 3dB +/- 4.5kHz

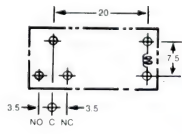
Cat R-5050 **\$6.95**  
5 or more **\$5.91**

## RELAYS

### SPDT 12V DC High Power Relay

Contact Current (max): 5A  
Contact Voltage (max): 240V AC, 30V DC  
Nominal Coil Voltage: 12V DC  
Coil Resistance: 200 ohms  
Operating Time (typical): 20ms  
Release Time (typical): 10ms  
Overall Size: 29(l) x 13(w) x 25(h)mm

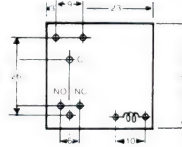
Cat P-8010 **\$8.95**  
10 or more **\$8.06**



### SPDT 12V DC Coaxial Relay

Coil Voltage (nom.): 12V DC  
Current Consumption: 80mA @ 12V DC  
Input Power (max): 150W PEP @ 500MHz  
Maximum Frequency: up to 1500MHz  
Switching time (typical): < 15ms  
Insulation: > 100M ohms @ 500V DC  
Overall Size: 35(l) x 35(w) x 18(h)mm

Cat P-8030 **\$39.95**  
10 or more **\$35.96**

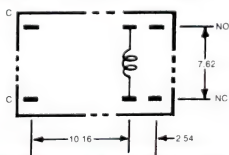


### SPDT 12V DC

High Sensitivity Type. Gold-overlay silver contacts.  
Contact Rating: 28V DC @ 1A  
120V AC @ 0.5A

Contact Switching Current: 2A  
Contact Switching Voltage: 150V AC  
Coil Resistance: 700 ohms @ 17mA, 12V DC  
Operating Time (typical): 5ms  
Release Time (typical): 5ms  
Overall Size: 15.6(l) x 10.6(w) x 10.5(h)

Cat P-8007 **\$5.95**  
10 or more **\$5.36**



Great for Hi-Fi  
noise suppression!

## Toroidal Balun Kit

Make up your own balun or impedance matching transformer! Contains a toroidal ring with iron powder core, heavy gauge insulated wire and detailed instructions. When used in a 1:1 52 ohm configuration, it can handle up to 2kW P.E.P. with minimal insertion loss. Ideal for antennas up to 30MHz. Can also be used for RFI suppression on your hi-fi.... simply wrap the speaker leads through the core - as many turns as possible.

Cat D-5350 **\$19.95**



## Slug Tuned IF/OSC Coil Pack

Set comprises 1st, 2nd & 3rd 455kHz standard miniature IF transformers and standard b/c oscillator coil.

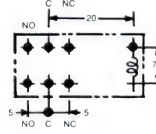
Cat R-5040 **\$2.50**  
5 or more **\$2.13**



## DPDT 12V DC High Power Relay

Contact Current (max): 5A  
Contact Voltage (max): 240V AC, 30V DC  
Nominal Coil Voltage: 12V DC  
Coil Resistance: 200 ohms  
Operating Time (typical): 20ms  
Release Time (typical): 10ms  
Overall Size: 29(l) x 13(w) x 25(h)mm

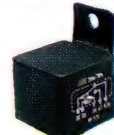
Cat P-8012 **\$9.95**  
10 or more **\$8.96**



## SPDT 12V DC Horn Relay

Ideal for car/boat horn circuits, alarms, ignition cut-outs or any application where high currents have to be switched.  
Contact Current: 20 Amps DC  
Contact Voltage: 12V DC  
Coil Voltage: 12V DC  
Termination: Spade Lugs  
Overall Size: 30(l) x 30(w) x 26(h)mm

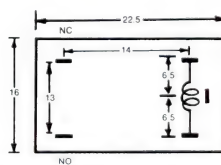
Cat P-8035 **\$5.95**  
10 or more **\$5.24**



## SPDT 8V DC - 12V DC

Contact Current (max): 3A @ 120V AC  
Contact Voltage (max): 250V AC  
Coil Voltage (nom.): 9V DC  
Coil Resistance: 225 ohms  
Operating Time (typical): 15ms  
Release Time (typical): 10ms  
Overall Size: 22.6(l) x 16.4(w) x 21.3(h)mm

Cat P-8008 **\$2.95**  
10 or more **\$2.51**



## DC Choke

Suitable for use as a DC supply filter choke to reduce the effects of noise and voltage spikes in sensitive electronic equipment. Ideal for car hi-fi, communications, etc.

Inductance @ 1A: 1mH (approx.)

Maximum continuous current: 4 amps

Size: 20 x 16 x 16mm

Cat R-5300

**\$4.95**

10 or more **\$4.21**



## RF Chokes (PCB Mount)

Value	Cat No.	Value	Cat No.
1uH	R-5200	82uH	R-5226
1.5uH	R-5202	100uH	R-5228
2.2uH	R-5204	150uH	R-5230
3.3uH	R-5206	220uH	R-5232
4.7uH	R-5208	330uH	R-5234
6.8uH	R-5210	470uH	R-5236
8.2uH	R-5212	560uH	R-5238
10uH	R-5214	820uH	R-5240
15uH	R-5216	1mH	R-5242
22uH	R-5218	1.5mH	R-5244
33uH	R-5220	2.5mH	R-5246
47uH	R-5222	4.7mH	R-5248
68uH	R-5224	10mH	R-5250

**\$1.25 ea** 10 or more **\$1.06 ea**

## 303.8MHz Saw Resonator

Surface Acoustic Wave Resonator as used in wireless alarm transmitters, oscillators, etc.



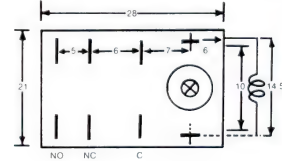
Cat Z-2771 **\$9.95**  
10 or more **\$8.95**

For Detailed Information on Z-2771  
see Data Section Page 215

## DPDT 12V DC Heavy Duty Relay

High contact to coil voltage isolation  
Contact Current (max): 10A  
Contact Voltage (max): 240V AC  
Coil Voltage (nom.): 12V DC  
Coil Resistance: 160 ohms  
Operating Time (typical): 20ms  
Release Time (typical): 20ms  
Overall Size: 28(l) x 21(w) x 35(h)mm

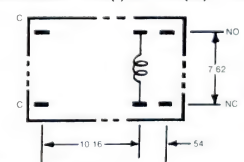
Cat P-8014 **\$12.95**  
10 or more **\$11.66**



## SPDT 5V DC

High Sensitivity Type. Gold-overlay silver contacts.  
Contact Rating: 28V DC @ 1A  
120V AC @ 0.5A

Contact Switching Current: 2A  
Contact Switching Voltage: 150V DC  
Coil Resistance: 120 ohms @ 42mA, 5V DC  
Operating Time (typical): 5ms  
Release Time (typical): 5ms  
Overall Size: 15.6(l) x 10.6(w) x 10.5(h)



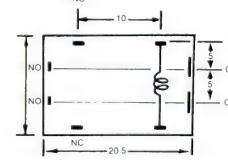
Cat P-8005 **\$5.95**  
10 or more **\$5.36**



## DPDT 12V DC

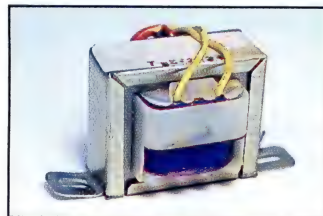
Contact Current (max): 1A @ 120V AC  
Contact Voltage (max): 120V AC  
Coil Voltage (nom.): 12V DC  
Coil Resistance: 400 ohms  
Operating Time (typical): 10ms  
Release Time (typical): 7ms  
Overall Size: 20.5(l) x 16(w) x 16.3(h)mm

Cat P-8024 **\$4.95**  
10 or more **\$4.21**





## 240V GENERAL PURPOSE



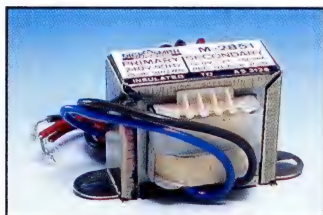
**7V CT + 7.5V**  
 Secondary Voltage: 3.5 - 0 - 3.5V & 7.5V  
 Secondary Current: 250mA & 10mA  
 Terminations: Flying Leads  
 Dimensions: 33(h) x 59(w) x 29(d)mm  
 Cat M-2824

**\$6<sup>25</sup>**



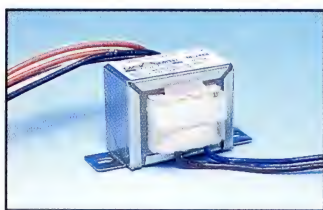
**9V CT @ 150mA**  
 Secondary Voltage: 4.5 - 0 - 4.5V  
 Secondary Current: 150mA  
 Terminations: Flying Leads  
 Dimensions: 31(h) x 57(w) x 29(d)mm  
 Cat M-2840

**\$5<sup>25</sup>**



**12.6V CT @ 150mA**  
 Secondary Voltage: 6.3 - 0 - 6.3V  
 Secondary Current: 150mA  
 Terminations: Flying Leads  
 Dimensions: 35(h) x 43(w) x 35(d)mm  
 Cat M-2851

**\$7<sup>95</sup>**



**30V CT + 36V CT @ 280mA**  
 Secondary Voltage: 18-15-0-15-18V  
 Secondary Current: 280mA  
 Terminations: Flying Leads  
 Dimensions: 35(h) x 44(w) x 42(d)mm  
 Cat M-2856

**NEW 93**

**\$8<sup>95</sup>**



**6.3 - 15V @ 1A**  
 Secondary Voltage: 6.3, 7.5, 8.5, 9.5, 12.6 & 15V  
 Secondary Current: 1A  
 Terminations: Solder Lugs  
 Dimensions: 50(h) x 59(w) x 54(d)mm  
 Cat M-2155

**\$12<sup>95</sup>**



**30V CT + 15V CT @ 1A**  
 Secondary Voltage: 15-7.5-0-7.5-15V  
 Secondary Current: 1A  
 Terminations: Flying Leads  
 Dimensions: 50(h) x 61(w) x 44(d)mm  
 Cat M-2860

**NEW 93**

**\$14<sup>95</sup>**



**6.3-15V @ 2A**  
 Secondary Voltage: 6.3, 7.5, 8.5, 9.5, 12.6 & 15V  
 Secondary Current: 2A  
 Terminations: Solder Lugs  
 Dimensions: 60(h) x 70(w) x 68(d)mm  
 Cat M-2156

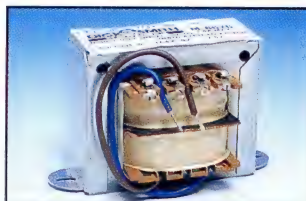
**NEW 93**

**\$16<sup>95</sup>**



**12 - 30V @ 1A**  
 Secondary Voltage: 12, 15, 17.5, 20, 24, 27.5 & 30V  
 Secondary Current: 1A  
 Terminations: Solder lugs  
 Dimensions: 60(h) x 69(w) x 65(d)mm  
 Cat M-6672

**\$19<sup>95</sup>**



## Multi-windings 7.5 - 42.5V @ 60VA

Power Rating: 60VA  
 Output Windings: 0 - 10 - 17.5V @ 1.4A  
 0 - 17.5V @ 1.4A  
 0 - 7.5V @ 1.4A  
 Terminations: Solder lugs  
 Dimensions: 65(h) x 79(w) x 70(d)mm  
 Cat M-6676

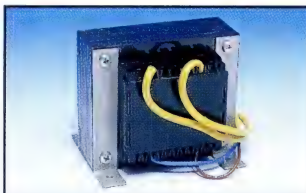
**\$24<sup>95</sup>**



## 12 - 30V @ 2A

Secondary Voltage: 12, 15, 17.5, 20, 24, 27.5 & 30  
 Secondary Current: 2A  
 Terminations: Solder lugs  
 Dimensions: 65(h) x 79(w) x 70(d)mm  
 Cat M-1991

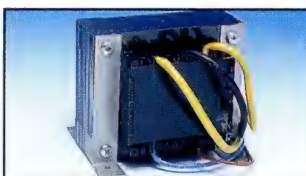
**\$26<sup>95</sup>**



## 18V @ 6A

Secondary Voltage: 18V  
 Secondary Current: 6A  
 Terminations: Flying leads  
 Dimensions: 96(h) x 80(w) x 74(d)mm  
 Cat M-2000

**\$44<sup>95</sup>**



## 56V CT @ 2A

Secondary Voltage: 28 - 0 - 28V  
 Secondary Current: 2A  
 Terminations: Flying leads  
 Dimensions: 96(h) x 80(w) x 74(d)mm  
 Cat M-0144

**\$44<sup>95</sup>**



## Suits 13.8V @ 25A Peak Supplies!

## 18V @ 16.7A

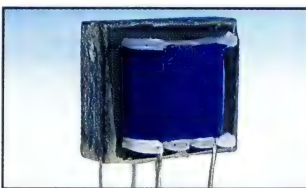
Secondary Voltage: 18V  
 Secondary Current: 16.7A  
 Dimensions: 95(h) x 114(w) x 83(d)mm  
 Cat M-2010

**\$89<sup>95</sup>**

## AUDIO TRANSFORMERS

### Transistor Audio Transformers

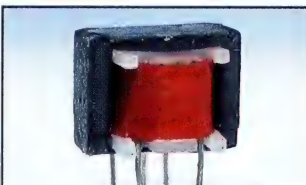
Suitable for transistor radio replacements, transistor projects and oscillator circuits requiring coupling transformers.



## 3K: 3K CT

Primary: 3K ohm  
 Secondary: 3K ohm  
 Use: Coupling  
 Size: 15(h) x 17(w) x 15(d)mm  
 Construction: Iron Core.  
 Cat M-0222

**\$1<sup>95</sup>**



## 1K CT: 8 Ohm

Primary: 1K ohm  
 Secondary: 8 ohm  
 Use: 350mW O/P  
 Construction: Ferrite Core  
 Size: 11(h) x 15(w) x 14(d)mm  
 Cat M-0216

**\$1<sup>95</sup>**



## Audio Line Transformer

Ideal for most PA-BGM applications. Suits all speaker impedances. Multi-tapped for use with 100V or 70V lines.

Rated: 4 watts RMS  
 Primary: 2.5K, 5K ohms  
 Output Windings: 2, 4, 8, 16 ohms  
 Dimensions: 35(h) x 62(w) x 37(d)mm  
 Cat M-1100

**\$6<sup>95</sup>**



## Variable Auto Transformer

Suitable for laboratory and test-bench applications needing a continuously adjustable 0 to 250Vac 5 Amp supply. Note: This is not an isolation transformer and is unsuitable for general household use.

Cat Q-1750

**NEW '93**

**\$249**

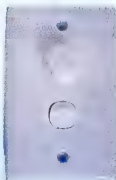


## Light Dimmers

Fits standard wall fitting to replace existing light switch with combined dimmer and switch.

**With Wall Plate**  
(Large) Cat M-7057

**With Architrave Plate** **\$14.95**  
(Small) Cat M-7058



## Light Switches

To fit standard wall and architrave fittings. All switches are rated at 10 amps.

**Single Switch** **\$7.95**  
Wall Plate (large) Cat M-7036



**Architrave Plate** **\$6.95**  
(small) Cat M-7038



## Double Powerpoint

Standard wallmount double powerpoint with two switches. Rated at 10A 250V.

White finish.

Cat M-7032 **\$19.95**



## Surface Socket

Standard 3 pin surface mount socket. Rated at 10 amps.

White finish.

Cat M-7030 **\$6.95**



## Computer Cable Wallplate

Wall plate to suit 25 Pin 'D' connector for computer cables. Plate with cut-out only.

White finish.

Cat M-7054 **\$5.50**



## Wall Plates

Standard white plates for wall mounting.

Single switch  
Cat M-7052

Double switch  
Cat M-7053

Blank  
Cat M-7046

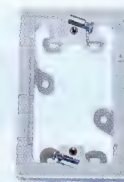
**\$4.25** ea



## Mounting Block

For wall mount power-points, switches, etc where flush mounting is not possible. Suits standard wall plate switches, etc.

Cat M-7042 **\$4.25**



## Wall Board Clip

Allows flush mounting of wall plate switches, power-points, etc on cavity walls.... Eg. plaster, timber (not brick).

Cat M-7040 **\$2.25**



## Line Switch

Ideal for standard lamps, etc. Simply wires into power cord. Rated at 10 amps.

Cat M-7056 **\$10.95**



## Lamp Holder

Batten mount for standard Bayonet Cap globes. Fixed position.

Cat M-7029 **\$6.95**



## Cord Grip Lamp Holder

Cat M-7026 **\$3.95**



## Lampholder With Switch

Lampholder fits standard 10A cord and has push-bar switch for standard lamps, etc.

Cat M-7027 **\$8.95**



## Line Sockets

10 amp, 3 pin line socket for extension cords, etc.

Grey Cat M-7020  
Clear Cat M-7022

**\$6.50** ea



## Light Socket Plug Adaptor

Plugs into standard light socket (bayonet type).

Cat M-7025 **\$2.95**



## Plug Identity Labels

Ever un-plugged your VCR or clock-radio when you meant to un-plug something else? While re-setting the digital clock, you probably wished there was an easy way to tell which plug was which. Now there is! This pack gives you 38 pre-printed (marked Video, TV, computer and such) and 12 blank labels. Stick them onto any of the eight label-holders that in turn attach to the appliance plug. Now there's no way to mix them up!

Cat M-7250 **\$4.95**

**click**



## 3 Pin Plugs

10 amp, 3 pin plugs. With collar to hold cable.

White Cat M-7000 **\$2.95** ea  
Clear Cat M-7002



## Side Entry Plug

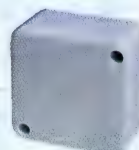
10 amp, 3 pin plug with cord entry at side.

Cat M-7006 **\$3.25**

## 4-Way Junction Box

4-way plastic junction box (40A/415V) with screw down cover.

Cat M-7048 **\$5.95**



## IEC CONNECTORS

### IEC Female Line Connector

3 pin socket to suit 3 pin IEC plugs as used on computer equipment, etc. Rated at 10 amps.

Cat M-7060 **\$4.95**



### IEC Female Chassis Connector



Cat M-7064 **\$4.95**

Flush finish socket accepts 3 pin IEC line plug. Rated at 6 amps.

### IEC Male Chassis Connector



Cat M-7066 **\$3.95**

Suitable for flush mounting on computer, hi-fi equipment etc. Accepts IEC line socket. Rated at 6 amps.



# Wire & Cable

## HOOK-UP WIRE

Flexible, fully insulated, low voltage hook up wire.



### Flexible Light Duty

Rating: 1A Nom.  
Conductors: 10 x 0.12mm  
Cross Sectional Area: 0.11mm<sup>2</sup>  
Insulation: PVC

Red W-2220  
Black W-2221  
Brown W-2222  
Orange W-2223  
Yellow W-2224  
Green W-2225  
D/Blue W-2226  
Purple W-2227  
Lt Blue W-2228  
Grey W-2229  
Cream W-2230  
White W-2231

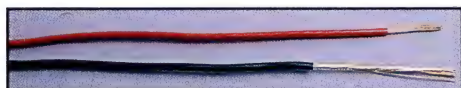
**15¢/m**  
100m or more 10¢/m

### 12 Colour Pack

A handy pack of 12 x 2m (that's 24 metres) of different coloured strands of light duty cable wire the same as W-2220 to W-2231. All are 10 x 0.12mm cable. Cross sectional area: 0.11mm<sup>2</sup>. Ideal for projects, hobbyists, etc.

Cat W-4010

**\$3<sup>95</sup>/pk**



### Medium Duty

Rating: 4.5A Nom.  
Cross Sectional Area: 0.49mm<sup>2</sup>  
Conductors: 10 x 0.25mm  
Insulation: PVC

Red W-2240  
White W-2241  
Black W-2242  
Blue W-2243  
Yellow W-2244

**30¢/m**  
100m or more 21¢/m

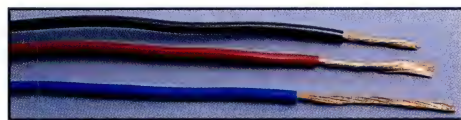


### Heavy Duty

Rating: 7.5A  
Conductors: 24 x 0.2mm  
Cross Sectional Area: 0.75mm<sup>2</sup>  
Insulation: PVC

Red Cat W-2260  
Black Cat W-2262  
Green/Grey Cat W-2264

**35¢/m**  
100m or more 24¢/m

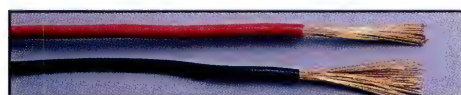


### Very Heavy Duty

Rating: 240V AC, 10A Nom.  
Conductors: 32 x 0.2mm  
Cross Sectional Area: 1.0mm<sup>2</sup>  
Insulation: PVC

Brown Cat W-2280  
Blue Cat W-2282  
Red Cat W-2284

**40¢/m**  
100m or more 28¢/m



### Ultra Heavy Duty

Rating: 240V AC, 30A max.  
Conductors: 41 x 0.32mm  
Cross Sectional Area: 3.3mm<sup>2</sup>  
Insulation: PVC

Red Cat W-2286  
Black Cat W-2288

**95¢/m**  
100m or more 66¢/m



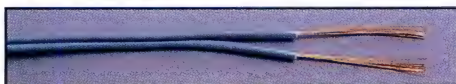
### Ultra Flexible

Rating: 10A max.  
Conductors: 512 x 0.05mm  
Cross Sectional Area: 1mm<sup>2</sup>  
Insulation: PVC

Red Cat W-2290  
Black Cat W-2292

**\$3<sup>25</sup>/m**  
100m or more \$2.27/m

## SPEAKER CABLE



### Light Duty

Suitable for short runs in intercoms and Hi-Fi applications. PVC insulation with colour coded polarity indicator.

Conductors: 14 x 0.14mm  
Cross Sectional Area: 0.22mm<sup>2</sup>  
Insulation: PVC

Cat W-2010

**35¢/m**  
100m or more 24¢/m



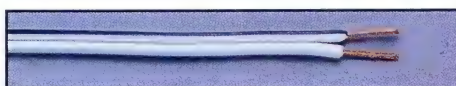
### Medium Duty

Lower resistance than W-2010, for use in longer runs. PVC insulation, with colour coded polarity indicator.

Conductors: 14 x 0.20mm  
Cross Sectional Area: 0.44mm<sup>2</sup>  
Insulation: PVC

Cat W-2012

**45¢/m**  
100m or more 31¢/m



### Heavy Duty

Heavy duty mains rated (240V AC @ 7.5A), insulated cable for high power and long runs. PVC insulation with colour coded polarity indicator.

Conductors: 24 x 0.20mm  
Cross Sectional Area: 0.75mm<sup>2</sup>  
Insulation: PVC

Cat W-2020

**80¢/m**  
100m or more 56¢/m

### OFC Cables

Our OFC (oxygen free copper) cable with PVC insulation has high conductivity and very low power loss. It provides the best performance for demanding audiophile applications.

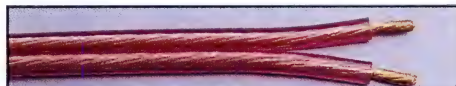


### OFC Speaker Cable

Conductors: 60 x 0.12mm  
Cross Sectional Area: 0.66mm<sup>2</sup>  
Insulation: Low dielectric constant

Cat W-2013

**95¢/m**  
100m or more 66¢/m



### Super Low Loss OFC

Conductors: 315 x 0.12mm  
Cross Sectional Area: 3.5mm<sup>2</sup>  
Insulation: Low dielectric constant PVC

Cat W-2017

**\$3<sup>95</sup>/m**  
100m or more \$2.76/m

## COAXIAL CABLE

### TV Cables

75 ohm coaxial and 300 ohm ribbon TV cables. The cable you choose will depend on the length of the run, the position of the cable and the strength of the signal in your area. See page 62 for details on antenna and cable installations.



### TV Ribbon Cable

300 ohm ribbon cable for connecting antennas to TV sets. Suitable for shorter runs. Available in both black and clear. VHF Use Only

Black Cat W-2070  
Clear Cat W-2071

**35¢/m**  
100m or more 24¢/m



### RG-59U Economy

Economical 75 ohm coax as used by many installers. Suitable for most average installations where there's a reasonable signal and runs are not too long.

Centre Conductors: 1 x 0.6mm  
Shielding: Foil shield & copper braid  
Dielectric: Solid P.E.  
Attenuation @ 100m: 100MHz: 7dB  
300MHz: 14dB  
550MHz: 23dB

White Cat W-2080  
Black Cat W-2081

**90¢/m**  
100m or more 63¢/m



### 75 Ohm Air Space

High quality, low loss coax that's ideal for low signal area installations.

Centre Conductor: 1 x 0.95mm copper  
Shielding: Foil & 48 x 0.12mm copper braid

Dielectric: Air cored P.E.  
Attenuation @ 100m: 100MHz: 6.9dB  
200MHz: 10.2dB  
470MHz: 15.5dB  
700MHz: 19.3dB

Cat W-2082  
**\$1<sup>25</sup>/m**  
100m or more 87¢/m



### 75 OHM RG 11/U

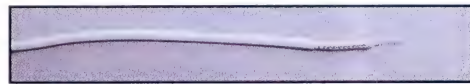
A professional quality coax cable. Ideal for satellite TV installations and extended runs.

Centre Conductors: 1 x 1.63 Solid Copper Core  
Shielding: 192 x 0.18mm Copper Braid  
Dielectric: Cellular Polyethylene

Attenuation @ 100m: 100MHz: 4.9dB  
200MHz: 7.2dB  
500MHz: 12.1dB  
900MHz: 17.0dB

**100m or more \$2.76/m**

Cat W-2083  
**\$3<sup>95</sup>/m**



### RF Transmission Cable

#### 50 Ohm RG-178 Teflon

Very high quality mini (2.5mm) 50 ohm coax that's ideal for internal wiring in transmitters, etc. With Teflon insulation it can handle up to 100 watts @ 500MHz.

Centre Conductors: 7 x 0.1mm silver coated copper  
Shielding: Silver coated copper, 96% coverage

Dielectric: T.F.E. (Teflon)  
Attenuation @ 100m: 100MHz: 45.9dB  
200MHz: 62.3dB  
400MHz: 91.9dB

Cat W-2088  
**\$3<sup>95</sup>(1m pk.)**  
10 up \$2.95/pk



### 50 Ohm RG-58C/U

Commercial grade 50 ohm coax. Complies with Mil Spec MIL-C-17D.

Centre Conductors: 19 x 0.18mm tinned copper  
Shielding: Braided tinned copper, 94.2% coverage

Dielectric: P.E., Type A  
Attenuation @ 100m: 100MHz: 16dB  
400MHz: 38dB

Cat W-2092  
**\$1<sup>25</sup>/m**  
100m or more 87¢/m





## 50 Ohm RG-213/U

A 10mm diameter, low loss 50 ohm cable for HF and VHF/UHF applications. Complies with MIL-C-17D.

Centre Conductors: 7 x 0.7mm Copper  
Shielding: Braided copper, 97% coverage  
Dielectric: P.E.  
Attenuation @ 100m: 50MHz: 5.2dB  
100MHz: 7.2dB  
400MHz: 15.4dB

Cat W-2099 **\$2<sup>95</sup>/m**  
100m or more **\$2.06/m**



## 50 Ohm Belden 9913

Extremely low loss 50 ohm coax. This is our highest grade coax. It provides 100% shield coverage and is ideal for VHF/UHF applications.

Centre Conductors: 1 x 2.7mm copper  
Shielding: Duobond II foil & tinned copper braid  
Dielectric: P.E. (semi-solid)  
Attenuation @ 100m: 50MHz: 3.0dB  
100MHz: 4.6dB  
400MHz: 8.5dB  
1000MHz: 14.8dB

Cat W-2097 **\$7<sup>95</sup>/m**  
100m or more **\$5.96/m**

## SHIELDED AUDIO CABLES

### Light Duty

Light duty flexible cable with PVC sheath.



### Single Core Mini

Centre Conductors: 10 x 0.08mm copper  
Shielding: Wrapped copper  
Diameter: 1.3mm O.D.

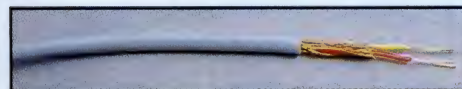
Cat W-2031 **45<sup>5</sup>/m**  
100m or more **31<sup>5</sup>/m**



### Single Core Shielded

Centre Conductors: 7 x 0.12mm Copper  
Shielding: 32 x 0.12mm, spiral wrapped  
Diameter: 3mm O.D.

Cat W-2030 **50<sup>5</sup>/m**  
100m or more **35<sup>5</sup>/m**



### Twin Core Shielded

Centre Conductors: 7 x 0.12mm copper  
Shielding: 32 x 0.12mm, spiral wrapped  
Diameter: 4mm O.D.

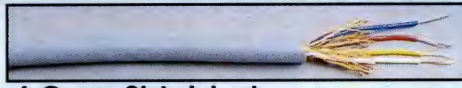
Cat W-2034 **70<sup>5</sup>/m**  
100m or more **49<sup>5</sup>/m**



### Twin Shielded Fig. 8

Centre Conductors: 7 x 0.12mm copper  
Shielding: 32 x 0.12mm, spiral wrapped  
Diameter: 2 X 2.8mm O.D.

Cat W-2036 **85<sup>5</sup>/m**  
100m or more **59<sup>5</sup>/m**



## 4 Core Shielded

Centre Conductors: 7 x 0.12mm copper  
Shielding: 32 x 0.12mm, spiral wrapped  
Diameter: 5mm O.D.

Cat W-2038 **\$4<sup>30</sup>/m**  
100m or more **91<sup>5</sup>/m**



## 4 Core Flat

Centre Conductors: 10 x 0.1mm copper  
Shielding: Spiral wrapped copper  
Diameter: 4 X 2.5mm O.D.

Cat W-2039 **\$4<sup>50</sup>/m**  
100m or more **\$1.05/m**



### Heavy Duty

## Ultra Flexible Twin Core

Centre Conductors: 10 X 0.12mm  
Shielding: 48 X 0.1 braided copper  
Sheath: Flexible PVC, 5mm O.D.

Cat W-2037 **\$2<sup>25</sup>/m**  
100m or more **\$1.57/m**



## Microphone Cable

Very heavy insulation and double cotton strengtheners makes this ideal for P.A. systems, etc.

Centre Conductors: 20 x 0.12mm copper  
Shielding: Braided copper  
Sheath: PVC, 6mm O.D.

Cat W-2035 **\$4<sup>95</sup>/m**  
100m or more **\$1.36/m**



## Twin Shielded 'Musiflex'

A low capacitance, flexible twin core cable with a conductive plastic shield for excellent shielding properties. With 30 x 0.12mm drain wire.

Centre Conductors: 30 x 0.12mm copper  
Shielding: Conductive thermoplastic  
Sheath: PVC, 6.5mm O.D.

Cat W-2044 **\$2<sup>45</sup>/m**  
100m or more **\$1.71/m**



### Specialised Cables

## Super OFC Single

High quality single core shielded cable made with Oxygen Free Copper (OFC) for maximum conductivity and shielding properties (90% coverage).

Centre Conductors: 14 x 0.18mm  
Shielding: 112 x 0.12mm 12 pitch braided copper  
Sheath: PVC, 6mm O.D.

Cat W-2032 **\$4<sup>95</sup>/m**  
100m or more **\$1.36/m**



## Super OFC Dual Fig.8

Great for audio use... eg. making up RCA to RCA patch leads. 90% shield coverage.

Centre Conductors: 14 x 0.18mm  
Shielding: 112 x 0.12mm 12 pitch braided copper  
Sheath: PVC

Cat W-2033 **\$3<sup>95</sup>/m**  
100m or more **\$2.76/m**



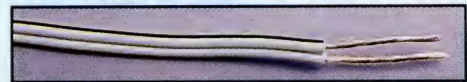
## Coiled Mic Cable

Extends fully up to 1 metre. 3 core, it's ideal for transceiver microphone leads.

Centre Conductors: 30 x 0.08mm  
Shielding: wrapped copper (1 conductor only)  
Sheath: PVC

Cat W-1365 **\$4<sup>95</sup>**  
10 or more **\$3.70ea**

## MAINS CABLES



## Figure 8 Light Cable

The ideal cable for standard-lamps, etc. It's also an excellent cable for speaker connection and intercoms.

Conductors: 24 x 0.20mm  
Rating: 240V AC, 7.5A Nom.  
Conductor Area: 0.75mm<sup>2</sup> nom.  
Insulation: PVC

Cat W-2020 **75<sup>5</sup>/m**  
100m or more **52<sup>5</sup>/m**



## 3 Core Light Duty

Suitable for projects, test equipment, etc where it is not subject to excessive wear and tear, or where size and weight are important.

Conductors: 24 x 0.2mm  
Rating: 240V AC, 7.5A Nom.  
Conductor Area: 0.75mm<sup>2</sup> nom.  
Sheath: PVC. Grey, 6.1mm OD

Cat W-2055 **\$1<sup>10</sup>/m**  
100m or more **77<sup>5</sup>/m**

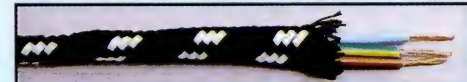


## 3 Core Ordinary Duty

Suitable for projects, etc where it may be subject to normal, every-day use, such as extension leads smaller appliances, small power tools, etc.

Conductors: 24 x 0.2mm  
Rating: 240V AC, 7.5A Nom.  
Conductor Area: 0.75mm<sup>2</sup> nom.  
Sheath: PVC. Grey, 7mm OD

Cat W-2056 **\$1<sup>85</sup>/m**  
100m or more **\$1.29/m**

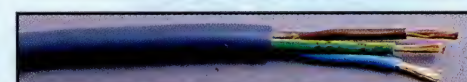


## 3 Core Textile

Flexible cable with textile outer sheath for use with older style appliances, etc.

Conductors: 42 x 0.15mm  
Rating: 240V AC, 7.5A Nom.  
Conductor Area: 0.75mm<sup>2</sup> nom.  
Sheath: Textile braid, 5.8mm OD

Cat W-2054 **\$4<sup>95</sup>/m**  
100m or more **\$1.36/m**

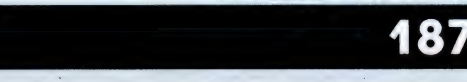


## 3 Core Ordinary Duty - 10A

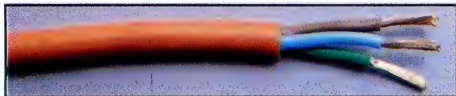
The ideal cable for power tools, etc where high drain and excessive wear call for something a little more robust.

Connectors: 32 x 0.2mm  
Rating: 240V AC 10A Nom.  
Conductor Area: 1.0mm<sup>2</sup> nom.  
Sheath: PVC. Grey, 7.4mm O.D.

Cat W-2058 **\$2<sup>05</sup>/m**  
100m or more **\$1.43/m**







## 3 Core Ordinary Duty - 15A

High power rating and very heavy insulation for industrial power tools, caravan power cables, extension leads for garden power tools, etc.

Conductors: 30 x 0.25mm  
Rating: 240V AC, 15A Nom.  
Conductor Area: 1.5mm<sup>2</sup> nom.  
Sheath: PVC. Orange, 8.6mm OD

Cat W-2059 **\$2<sup>95</sup>/m**  
100m or more **\$2.06/m**



## 6 Core Flex

Ideal for older style rotators, or for alarm system installations, where six conductors are required.

Conductors: 24 x 0.2mm  
Rating: 240V AC, 7.5A Nom.  
Conductor Area: 0.75mm<sup>2</sup> nom.  
Sheath: PVC

Cat W-2042 **\$3<sup>45</sup>/m**  
100m or more **\$2.41/m**

## DC POWER CABLES



## Figure 8 Heavy Duty

Ideal for running 150W spot lights, etc on the car or any high current application. Colour coded insulation to make polarity easier.

Conductors: 26 x 0.3mm  
Rated: 50V, 17A Max.  
Cross Sectional Area: 1.8mm<sup>2</sup>

Cat W-2025 **\$1<sup>25</sup>/m**  
100m or more **87c/m**

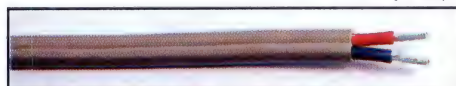


## Extra Heavy Duty

Similar to the cable above but a larger conductor area. It's colour coded and has an extra sheath for auto application.

Conductors: 26 x 0.32mm  
Rated: 50V, 19A Max.  
Cross Sectional Area: 2.1mm<sup>2</sup>

Cat W-2027 **\$1<sup>95</sup>/m**  
100m or more **\$1.36/m**



## Marine Cable

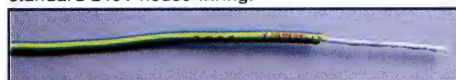
Made especially for Marine applications. Cable is double insulated and has tinned copper conductors to resist corrosion.

Conductors: 26 x 0.3mm  
Rated: 50V, 15A Max.  
Cross Sectional Area: 1.8mm<sup>2</sup>

100m or more **\$2.06/m** Cat W-2029 **\$2<sup>95</sup>/m**

## BUILDER'S CABLE

A range of wire and cable as used by builders for standard 240V house wiring.



## Earth Wire

Conductors: 7 x 0.67mm  
Rated: 240V AC, 25A Nom.  
Cross Sectional Area: 2.5mm<sup>2</sup>  
Insulation: Outer - PVC

Cat W-3010 **95¢/m**  
100m or more **66¢/m**



## 1/1.13 Twin & Earth

Conductors: 1 x 1.13mm (except earth)  
Rated: 240V AC, 10A Nom.  
Cross Sectional Area: 1.0mm<sup>2</sup>  
Insulation: Outer - PVC (V75)  
Inner - PVC

Cat W-2060 **\$1<sup>75</sup>/m**  
100m or more **\$1.22/m**



## 1/1.78 Twin & Earth

Conductors: 1 x 1.78mm  
Rated: 240V AC, 25A Nom.  
Cross Sectional Area: 2.5mm<sup>2</sup>  
Insulation: Outer - PVC (V75)  
Inner - PVC

Cat W-2062 **\$2<sup>45</sup>/m**  
100m or more **\$1.71/m**

## RAINBOW

Colour coded strands of insulated conductors bonded together in a flat cable. It's ideal for wiring looms, alarm systems, etc. Can be laid under carpets, split for separate wires or used as is.



## 12 Core

12 strands of 10 x 0.12mm conductors. Conductor area is 0.11mm<sup>2</sup>.

Cat W-2045 **\$1<sup>95</sup>/m**  
100m or more **\$1.36/m**

## COMPUTER/DATA CABLES

Fully insulated, shielded and sheathed multi-core data cables with drain wire. For running data lines around buildings, etc.



## 5 Core

Conductors: 7 x 0.20mm  
Sheath: PVC  
Shielding: Foil with drain wire

Cat W-2040 **\$1<sup>75</sup>/m**  
100m or more **\$1.22/m**



## 8 Core

Conductors: 7 x 0.20mm  
Sheath: PVC  
Shielding: Foil with drain wire

Cat W-2046 **\$2<sup>45</sup>/m**  
100m or more **\$1.70/m**



## 12 Core

Conductors: 7 x 0.20mm  
Sheath: PVC  
Shielding: Foil with drain wire

Cat W-2041 **\$2<sup>75</sup>/m**  
100m or more **\$1.92/m**



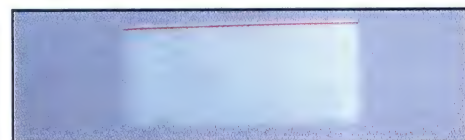
## 25 Core

Conductors: 7 x 0.20mm  
Sheath: PVC  
Shielding: Foil with drain wire

Cat W-2043 **\$3<sup>95</sup>/m**  
100m or more **\$2.76/m**

## IDC Computer Cables

Flat, multi-strand cable made specially for IDC applications. Comes boxed in 30 metre lengths for bulk buyers.



Type	Cat No.	Price/m	10m or more
26-way	W-2750	<b>\$3.00</b>	<b>\$2.40/m</b>
34-way	W-2752	<b>\$4.00</b>	<b>\$3.20/m</b>
40-way	W-2754	<b>\$5.00</b>	<b>\$4.00/m</b>
50-way	W-2756	<b>\$6.00</b>	<b>\$4.80/m</b>

## INTERCOM/ALARM CABLES

Multi stranded, low current capacity cables which are ideal for wiring alarm systems, intercoms, etc.



## Bell Cable

Conductors: 1 x 0.6mm  
Sheathing: PVC

Cat W-2005 **45¢/m**  
100m or more **31¢/m**



## 4 Core - Flexible

Conductors: 7 x 0.20mm  
Sheathing: PVC

Cat W-2100 **85¢/m**  
100m or more **59¢/m**



## 4 Conductor/Flat Telephone Cable

Conductors: 7 x 0.16mm  
Sheathing: PVC

Cat W-2121 **65¢/m**  
100m or more **45¢/m**







## 4 Core - Telephone Style

Conductors: 1 x 0.5mm  
Sheathing: PVC  
Cat W-2120 100m or more **70¢/m**  
**.49¢/m**



## 6 Core - Telephone Style

Conductors: 1 x 0.5mm  
Sheathing: PVC  
Cat W-2126 100m or more **95¢/m**  
**.66¢/m**



## 12 Core

Conductors: 1 x 0.5mm  
Sheathing: PVC  
Cat W-2140 100 or more **\$1.85/m**  
**\$1.29/m**

## MAINS LEADS



## Cable With 3 Pin Plug

Light duty cable (240V AC @ 7.5A) fitted with standard 3 pin plug on one end. The other end is bare ready for connection to your project. 2 metres long.

Cat W-2057 **\$4.95**



## Mains Lead. 7mm Spacing

2 metre mains cable fitted with standard 2 pin plug on one end and 7mm pin spacing socket on the other. As used on Sanyo and other modern audio equipment which do not require an earth lead.

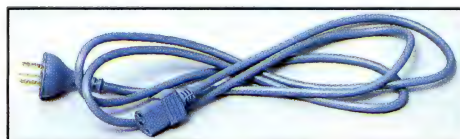
Cat W-1361 **\$8.95**



## Universal Mains Lead

Approved mains cable as used on a huge variety of audio and entertainment equipment which do not require an earth lead. It's 2 metres long and has a 2 pin mains plug on one end and a 2 pin figure 8 type socket on the other.

Cat W-1360 **\$8.95**



## IEC Mains Lead

Approved 2 metre mains lead with standard three pin plug on one end and 3 pin IEC socket on the other. As used on most computers.

Cat W-1362 **\$9.95**



## IC Male/Female Extension Lead

A quality 2 metre extension lead. Ideal for connecting a printer or monitor to your computer.

Cat W-1366 **\$13.95**



## Appliance Cord

Coiled appliance cord fitted with standard 3 pin plug and IEC socket. As used on modern kettles and other kitchen appliances. Stretches to 1 metre.

Cat W-1363 **\$14.95**

## WINDING & COATED WIRE

### Tinned Copper Wire

High quality tinned copper wire (22SWG) in handy 100g roll. Ideal for PC board links, hard wire jumper leads, chassis wiring, etc. Approximately 27 metre roll of 0.71mm tinned copper wire.

Cat W-3015 **\$6.95/roll**  
100 rolls or more **\$5.56/roll**

### Self-fluxing Winding Wire

Ideal for coil winding, motor rewinding, transformer building, etc.

### 100g Rolls

Gauge B&S	Gauge SWG	Diam. mm	Length Metres	Cat No.
16	18	1.25	9	W-3116
18	19	1.0	14	W-3118
20	21	0.8	21	W-3120
22	23	0.63	35	W-3122

**\$7.95/ea**  
10 or more **\$6.35/ea**

### 25g Rolls

Gauge B&S	Gauge SWG	Diam. mm	Length Metres	Cat No.
21	22	0.71	7	W-3123
24	25	0.50	13	W-3124
26	27	0.40	21	W-3126
30	33	0.25	55	W-3130
32	36	0.20	85	W-3132
36	40	0.125	216	W-3136

**\$5.25/ea**  
10 or more **\$4.20**

### Resistance Wire Pack - Cuprothal

Suitable for the construction of wire wound resistors, small heater elements, shunts, etc. Also ideal for emitter resistors in high power amplifiers. The wire is 28 B&S (0.32mm), it's solderable and has a resistance of 6.08 ohms/m. Composition: 45% nickel, 55% copper. Maximum continuous service temperature is 540°C. Comes in a 4 metre pack.

Cat W-3200 **\$4.00/pk**  
10 packs or more **70¢/pk**

### Resistance Wire Pack - Nichrome 80

Nichrome 80 is suitable for resistance heating elements where extreme temperatures (up to 1200°C) are involved. It's supplied in a 4m pack of 28 B&S gauge (0.32mm diameter) and provides a resistance of 13.4 ohms/m at 20°C.

Cat W-3205 **\$1.95/pk**  
10 Up **\$1.36/pk**

## Wire Wrap Pack

High quality insulated Kynar wire wrap wire in convenient 15 metre rolls. 30 AWG (0.25mm diam.) silver plated copper for use where very high density interconnections and superior electrical characteristics are important.

Black	Cat W-4002
Red	Cat W-4004
Green	Cat W-4006
Blue	Cat W-4008

**\$7.50/roll**  
10 Up **\$6/roll**

## Heat Shrinkable Materials

High flexibility, radiation cross linked, flame retardant (except clear), heat shrinkable tubing. It's very high quality military grade polyolefin and it's available in black, white, red, blue, green, yellow, orange, clear and green/yellow. Not all colours are available in all sizes. Complies with U.S. Mil Spec. # MIL-1-23053/5. Shrinks to approximately 1/2 listed diameter with very little longitudinal change (<15%).

Size	Cat No	Colour	Price	10 Up
1.2m x 1.6mm	W-4100	Black	<b>\$2.65</b>	<b>\$2.10</b>
1.2m x 1.6mm	W-4102	Colours	<b>\$2.65</b>	<b>\$2.10</b>
1.2m x 3.2mm	W-4104	Black	<b>\$3.15</b>	<b>\$2.50</b>
1.2m x 3.2mm	W-4106	Colours	<b>\$3.15</b>	<b>\$2.50</b>
1.2m x 4.8mm	W-4108	Black	<b>\$3.65</b>	<b>\$2.90</b>
1.2m x 4.8mm	W-4110	Colours	<b>\$3.65</b>	<b>\$2.90</b>
1.2m x 6.4mm	W-4112	Black	<b>\$4.25</b>	<b>\$3.40</b>
1.2m x 6.4mm	W-4114	Colours	<b>\$4.25</b>	<b>\$3.40</b>
1.2m x 9.5mm	W-4116	Black	<b>\$4.75</b>	<b>\$3.80</b>
1.2m x 9.5mm	W-4118	Colours	<b>\$4.75</b>	<b>\$3.80</b>
1.2m x 12.7mm	W-4120	Black	<b>\$5.25</b>	<b>\$4.20</b>
1.2m x 12.7mm	W-4122	Colours	<b>\$5.25</b>	<b>\$4.20</b>
1.2m X 19.1mm	W-4124	Black	<b>\$7.25</b>	<b>\$5.80</b>
1.2m X 25.4mm	W-4128	Black	<b>\$9.25</b>	<b>\$7.40</b>

## Hobbyists Heat-Shrink Pack

Handy Pack of heat-shrink tube in assorted colours, sizes and lengths (short lengths only). It's ideal for a variety of projects, etc. What you see in the pack is what you get in the pack!

Cat W-4060 **\$5.50/pk**

## Spaghetti Pack

Contains 30 lengths of assorted colours and diameters (each length is greater than 150mm long). Over 4.5m in total length.

Cat W-4040 **\$3.95/pk**  
10 Up **\$2.95/pk**

## Quick Fix Cable Clamps

They make fixing wiring a breeze. Designed to hold mains cable firmly in timber, masonry, etc without squashing or cutting into the insulation. In handy packs of twenty.

Size	Cable Type	Cat No.	Price
5mm	Figure 8	W-4020	<b>\$2.65</b>
13mm	Twin flat	W-4021	<b>\$2.75</b>
15mm	Twin flat	W-4022	<b>\$2.85</b>



## Cable Staples

Handy wire staples which make fixing low voltage cables to timber easy. They simply straddle the cable and are hammered into place. A plastic cover under each staple helps prevent damage to the cable. In packs of 100.

Cat W-4025 **\$3.95/pk**

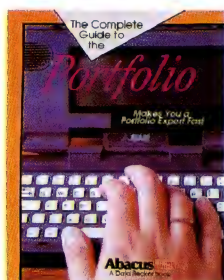
## Buy In Bulk & Save

If you need large quantities, you can save! Ring us for a quote and discover how much you can save by buying in bulk. For high quality parts and components, at wholesale prices... call us today!

Dick Smith Wholesale  
Sydney Area : 888 3200  
Outside Sydney : (008)26 3922 Free Call



## The Complete Guide To The Atari Portfolio



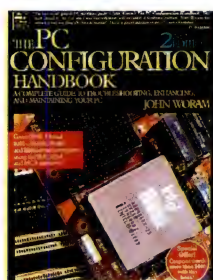
Michael Muller - 195 pages

A step by step guide through the many built-in programs and applications of the amazing Atari portfolio. Chapters include information on memory management, the address book file, diary, worksheet, clipboard, communicating data and more.

**\$44<sup>95</sup>**

Cat B-8700

## The PC Configuration Handbook 2nd Edition!



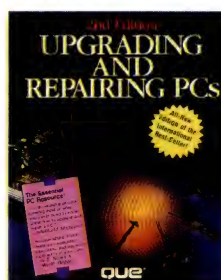
John Woram

There's no more comprehensive guide to getting the most from your PC. Learn time-saving techniques for configuring/reconfiguring your system to get maximum performance. Packed with easy to follow, in depth sections on troubleshooting, peripherals and maintaining and enhancing your PC's performance. Covers XT, AT, 386 and 486 based systems.

**\$59<sup>95</sup>**

Cat B-6203

## Upgrading and Repairing IBM PCs



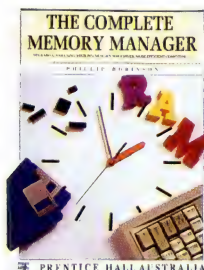
Scott Mueller

Looking to up-grade your PC but don't know where to start? This comprehensive reference is the ultimate source for the beginner or expert. Includes troubleshooting tips, advice on preventative maintenance, solutions to common PC problems, ASCII charts and even how to make the right purchasing decisions.

**\$69<sup>95</sup>**

Cat B-6195

## The Complete PC Memory Manager



Phillip Robinson

The complete guide to exploiting the memory potential on any PC or compatible. It tells you how to install extra memory and how to skillfully manage the memory you currently have available. You'll discover how to configure your system to use less memory, money-saving tips on how to run popular software

packages more efficiently, and descriptions of helpful memory management software.

**\$49<sup>95</sup>**

Cat B-6097

## RS-232 Made Easy



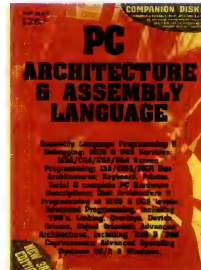
Martin S. Seyer

The second edition of this informative reference makes one of the most difficult computer subjects easy; even for the complete novice. This indispensable publication makes connecting computers, printers, terminal servers, modems, port boards, data switches, buffers, etc. a cinch. It's written in layman's terms and describes the functions of the RS-232 interface, presents charts on pin assignments and provides over 3,600 cable design diagrams.

**\$49<sup>95</sup>**

Cat B-6098

## PC Architecture & Assembly Language 3rd Edition

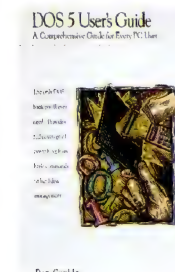


Barry Kauler - 270 pages. Just about everything you need to know to become an assembly language programmer. Together with the companion disk (purchase voucher included), this book provides a complete environment to understand Assembly language and the inner workings of your PC.

**\$28<sup>95</sup>**

Cat B-6099

## DOS 5 User's Guide



Dan Gookin

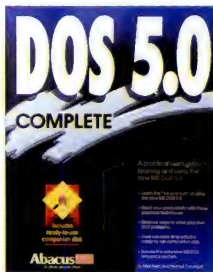
The hands-on guide that takes the mystery out of DOS 5! Learn how to work with DOS and your computer for maximum productivity. Novices and experts alike will appreciate the clear, easy-to-follow explanations of DOS and PC fundamentals. Covers basic and advanced DOS functions, troubleshooting in DOS, hard drive

management, DOS editor and DOS shell.

**\$39<sup>95</sup>**

Cat B-6101

## Includes Companion Disk!



## DOS 5.0 Complete

Manfred & Helmut Tornsdorf - 847 pages. The most authoritative DOS reference book available. It has an incredible 847 pages packed full of the 'ins & outs' of DOS. Includes a ready-to-use companion disk with dozens of powerful batch files, tips, explanation and more. Learn about

SHELL, DOSKEY, EDIT, QBASIC and new memory management features.

**\$44<sup>95</sup>**

Cat B-6500

## Official XTREE

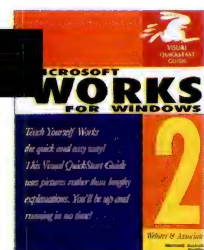


Covers all versions of Xtree, including the latest Windows version! It'll show you how to organise your hard disk in a snap, how to compress files in a flash, how to use batch files and more. There's also a concise guide to MS-DOS and Windows. Everything you ever wanted to know about managing and organising your computer files is here.

**\$39<sup>95</sup>**

Cat B-6606

## Works for Windows Quickstart



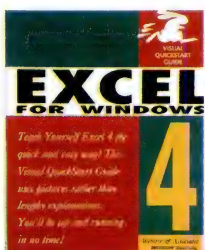
Need to get up and running with Works for Windows in a hurry? The Visual Quickstart guide is just the thing. Get into Works' everyday features without getting

bogged down in the finer details of the software. Over 200 pages, packed with pictures and without the heavy text that normally accompanies program guides.

**\$24<sup>95</sup>**

Cat B-6385

## Excel 4 For Windows Quickstart



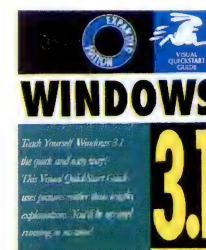
The concise visual introduction into Excel 4 for Windows! The Visual Quickstart series is the easiest and fastest way to get yourself working with Excel. Over 300 pages

covering; File Management, Moving and Selecting cells, Creating, Editing, Formatting and Printing. The explanations are short and concise for superb reference.

**\$29<sup>95</sup>**

Cat B-6355

## Windows 3.1 Quickstart Expanded



All the great features of the Quickstart series but with the extra advantage of step-by-step lessons that you can go through while you learn on your

computer. It's the perfect book for Windows beginners or anyone who wants to brush up on their skills.

**\$34<sup>95</sup>**

Cat B-6389

## Windows 3.1 Complete



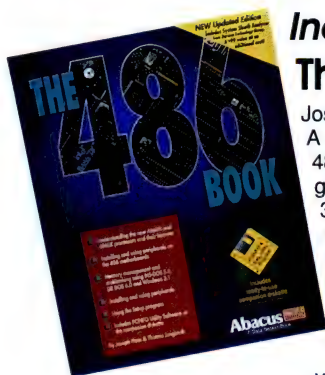
## Includes Diskette!

Harness the real power of Windows 3.1! The ultimate reference for novices or experienced users with invaluable tips and time-saving techniques for maximum productivity. It starts with the basics for setting-up Windows and shows you how to customise this powerful interface. Comes complete with a ready-to-use diskette of Windows Utilities.

**\$69<sup>95</sup>**

Cat B-6104



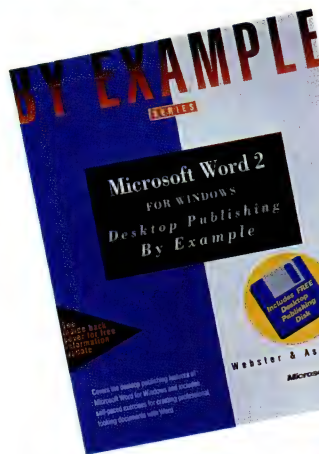


## Includes Diskette! The 486 Book

Joseph Haas & Thomas Jungbluth  
A complete guide to utilising the power of the 486 processor! The latest programs and guides give plenty of information on running 386 modes, but there seems to be very little which allows you to get the most out of the 486. This book is a must for all 486 owners! With comprehensive information of hardware, getting the most from operating systems, standard and extended Setup for AMI, Phoenix and other BIOS variants, using memory managers and multi-tasking. Comes with ready to use utilities diskette.

**'93**  
NEW

Cat B-6205 **\$69<sup>95</sup>**



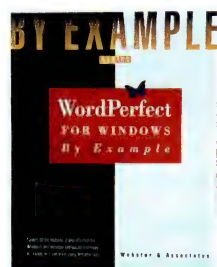
## With Disk Word 2.0 By Example

Here's how you learn to access the amazing potential of one of the world's most powerful word /desktop publishing programs. There's a section on typography & design and on the amazing desktop publishing features. The self-paced exercises will open your eyes to the possibilities Word offers, and the 'Design & Layout' Computer Based Training disk will have you producing professional documents in no time.

**'93**  
NEW

Cat B-6399 **\$49<sup>95</sup>**

## WordPerfect for Windows by Example



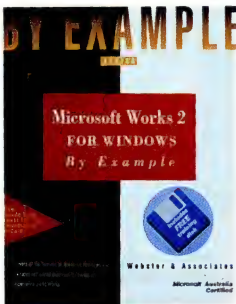
### With Computer based Training Disk!

The complete reference guide to WordPerfect for those who find manuals all too difficult to follow. Like all the books in the Webster series, this one is incredibly well-presented and has hundreds of illustrations to make it all as easy as can be.

**'93**  
NEW

Cat B-6398 **\$59<sup>95</sup>**

## Works 2.0 By Example



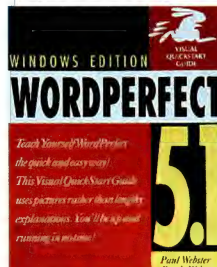
Over 1000 screen images to guide you through, the step-by-step exercises!

Learn at your own pace for a fraction of the cost of training programs. The easy-to-follow instructions and fully detailed descriptions make it easy to utilise the full potential of Works for Windows. 670 pages of information with 15 self-paced exercises.

**'93**  
NEW

Cat B-6386 **\$49<sup>95</sup>**

## WordPerfect for Windows By Example



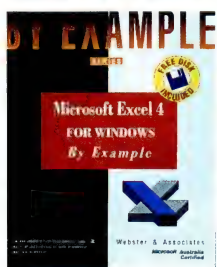
### Includes Disk

Get the most out of WordPerfect for Windows! It uses screen shots to take you through a fantastic series of exercises so you'll learn to master WordPerfect 5.1 at your own pace and in your own time. It's excellent for beginners and as a reference source for experienced users. Comes with disk containing hands-on Computer Based Training Exercises.

**'93**  
NEW

cat B-6397 **\$29<sup>95</sup>**

## Excel 4 By Example Includes Disk

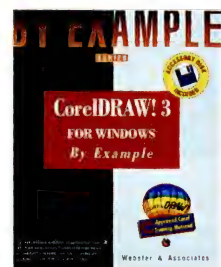


The best way to master Excel without going to expensive classes! With eighteen self-paced exercises and a detailed account of all the program functions. Comes complete with a diskette containing a comprehensive Computer Based Training program for hands-on experience. It's ideal for the beginner or anyone wishing to learn the easiest way around Excel.

**'93**  
NEW

Cat B-6358 **\$54<sup>95</sup>**

## Coreldraw 3.0 By Example Includes Disk



Learn to master Coreldraw in eighteen step-by-step exercises. Each exercise is designed to reinforce the concepts employed by Coreldraw. There are also detailed instructions on each subject. Includes a diskette with a Design & Layout computer based training program so you can learn while you use your computer. By far the best way to learn.

**'93**  
NEW

Cat B-6352 **\$54<sup>95</sup>**

## Coreldraw 3.0 Quickstart Easy to follow!

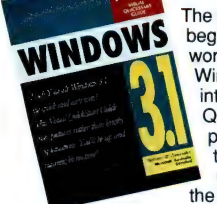


Take the easy approach to learning one of today's most powerful drawing and text manipulation programs. The Quickstart series uses pictures and keeps words to a minimum, to get you up and running....fast! It's ideal for beginners or for anyone needing fast visual reference to the many Coreldraw features. Over 400 pages of visual references on Coreldraw and its extensions.

**'93**  
NEW

Cat B-6350 **\$34<sup>94</sup>**

## Windows 3.1 Quickstart



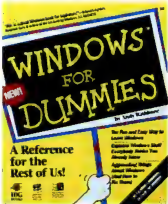
The fastest way for beginners to get working with the Windows 3.1 interface. Visual Quickstart provides an easy to follow guide to understanding the Program & File Managers, the Control Panel....

all the programs supplied with Windows 3.1! 218 pages that can transform the first time Windows user into a competent Windows manager.

**'93**  
NEW

Cat B-6391 **\$24<sup>95</sup>**

## Windows for Dummies



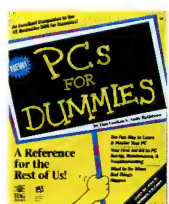
Yes, someone has finally written a computer book that makes sense to mere mortals like you and me. Windows for Dummies is by far the best reference source any newcomer to

Windows can have. It even explains stuff everybody thinks you should already know, and it does it in a fun and interesting way.

**'93**  
NEW

Cat B-6608 **\$34<sup>95</sup>**

## PCs for Dummies

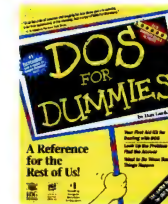


want to! PC's for Dummies is so friendly that you might want to take it out to dinner. If you feel you have to read at least one book.... this is it!

**'93**  
NEW

Cat B-6604 **\$34<sup>95</sup>**

## DOS for Dummies



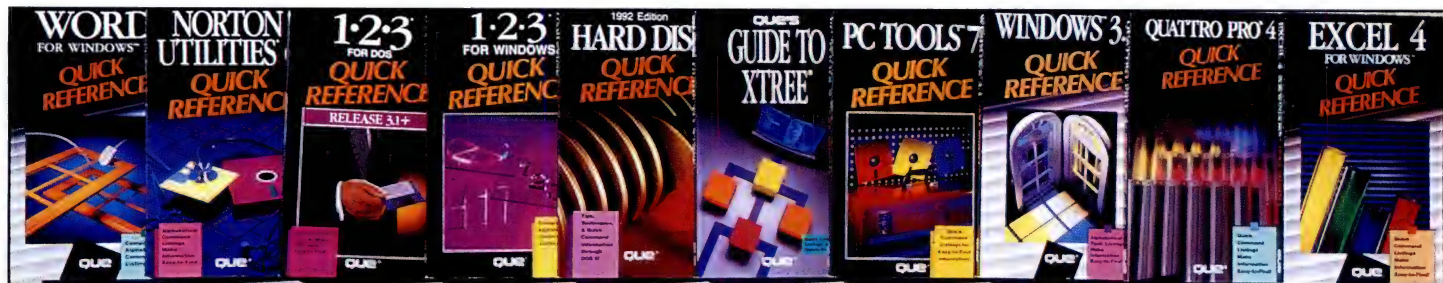
If you're a beginner with DOS, then this is the best book you can own. DOS for Dummies explains the terms and procedures it's written for 'the rest of us' in a

language that anyone can understand. Once you've read DOS for Dummies, you'll find that you're no longer a dummy!

**'93**  
NEW

Cat B-6602 **\$34<sup>95</sup>**

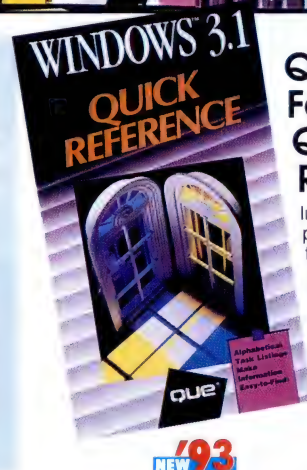




**The QUE series of Quick Reference books is proving very popular.... and for good reason!**

They're well presented, logical and incredibly easy to follow. They can be used as an instant reference source or as a comprehensive reference manual that describes the topic in easy to understand language. If ever the term 'user-friendly' could be used where it really meant something, it would have to be used to describe these books. For beginner or expert, the QUE series has the answers.

Word for Windows	B-6403	\$19.95
Fastback	B-6410	\$19.95
Excel for Windows	B-6420	\$19.95
WordPerfect 5.1	B-6400	\$19.95
Microsoft Word 5	B-6402	\$19.95
MSDOS 5.0	B-6404	\$19.95
Norton Utilities	B-6407	\$19.95
Lotus 1-2-3 Release 3.1	B-6408	\$26.95
1-2-3 for Windows	B-6409	\$19.95
PC Tools 7.0	B-6415	\$19.95
Quattro Pro 4.0	B-6418	\$19.95
Guide to XTree	B-6416	\$26.95
Hard Disk with DOS 5	B-6413	\$19.95



## QUE Fastback Quick Reference

Instant reference to this popular, high performance file back-up system. Easy to understand explanations to all the commands and procedures for both new and experienced operators. It's a must for all Fastback users.

**\$18.95**

Cat B-6410

## Hints, Maps & Solutions to... Computer Adventure Games

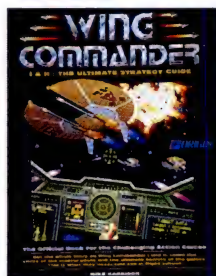


M. K. Simon  
The expert's guide to 22 of the most popular computer adventure games! Hints and solutions to

some of the most perplexing puzzles. With complete maps for all 22 games including Leisure Suit Larry, Police Quest, Star Trek and more. There's even step-by-step solutions when you're ready to 'throw in the towel'. A must for the true games adventurer.

**'93** Cat B-6807 **\$29.95**

## Wing Commander 1 & 2 Strategy Book



Get the whole story on Wing Commander I & II! Learn the tricks of the master pilots and the ultimate secrets of the game. Hit the afterburners, power up the shields, and test the lasers

as you prepare for the battle of your life. Wing Commander I & II - The Ultimate Strategy Guide gives you all the stuff they forgot to tell you in flight school.

**'93** Cat B-6803 **\$29.95**

## Guide To Nintendo Adventure Games



Victory awaits you! Get the answers you need to solve all those perplexing riddles for these popular Nintendo games: The Bard's Tale, Final Fantasy, The Immortal Shadowgate,

Swords & Serpents, Quest of the Avatar and Wizardry. It's loaded with complete dungeon maps, 'safe path' diagrams and puzzles, as well as invaluable hints and tips.

**'93** Cat B-9904 **\$15.95**

## Latest Edition! Nintendo Super NES Strategies

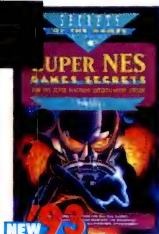


The latest edition in the ultimate unauthorised strategy series for Super NES games. It covers: The Legend of Zelda: A Link to the Past, The Addams Family, Super Castlevania IV, Super Mario World,

Super Adventure Island, Street Fighter II and much more.

**'93** Cat B-9959 **\$12.95**

## Super NES Games Secrets



You'll find the hottest secrets for today's most radical games in these unauthorised, uncensored editions. Learn to master your favourite Super NES games through amazing strategy sessions.

There are tons of graphics and tips for the beginner and master player. If you're serious about taking control of your NES games, these books are a must.

NES Secrets Vol. 1 B-9951 **\$19.95**  
NES Secrets Vol. 2 B-9953 **\$19.95**

## Guide to Super NES Games

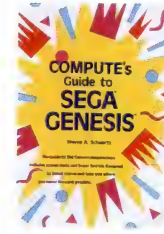


Hints, tips, strategies and more for some of the most popular Super Nintendo games including: Super Mario World, Final Fantasy II,

Populous, Sim City & Zelda. With passwords, game-busting tricks, techniques for handling the toughest levels, getting extra continues and more.

**'93** Cat B-9957 **\$24.95**

## Guide to Sega Genesis Defeat the Genesis!



More than 30 Sega Genesis game reviews and super secrets designed to boost scores and take you further than you ever

thought possible. You'll be able to find out about the hottest games before you buy! There's even a bonus section that includes reviews of the latest accessories.

**'93** Cat B-9992 **\$19.95**

## Sega Mega Drive Secrets



The very latest (Volume 3) in this fantastic series. Tons of tips and winning techniques for the hottest action, adventure, sports and strategy games. Master you Sega Mega Drive, show your friends who the

real Sega master is. What's more, you can find out about popular games before you buy them.

**'93** Cat B-9990 **\$19.95**





## Tic Tac Type With Disk!

Here's how you get the kids to play on the computer and know they're not wasting their time! It's perfect for kids eight years and over. Learning how to use a word processor, how to save and retrieve files, and the right finger positions for keyboard skills is turned into fun and games. They'll love it, it comes with a disk containing a word-processing program and educational games.

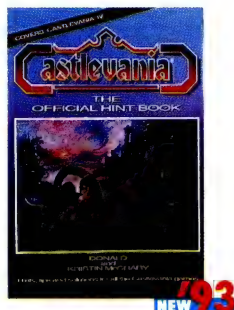
Cat B-6706 **\$39<sup>95</sup>**



## A Kid's Guide to Computers

What's an Apple? Who invented computers? What's a disk-drive? How do you make computer chips? The answers to these questions and much more are in this book. The ultimate collection of computer facts and fun is jammed full with puzzles, diagrams and fun activities so anyone can get computer smart.... fast!

Cat B-6700 **\$19<sup>95</sup>**



## Castlevania The Official Hint Book

Stride forward against the vile nest of monsters in Dracula's Castle! Take on the horrible Dracula and destroy his evil powers! Here's the only official book that will take you through all six Castlevania adventures. It's loaded with hints and tips, concise descriptions of each of the weapons and over 150 screen shots for the hottest strategies.

Cat B-9906 **\$19<sup>95</sup>**



## PC Picasso With Free Software!

PC Picasso, a Child's Computer Drawing Kit, lets them have as much creative fun as they would with a pencil and paper! It teaches them about computers and computer graphics programs at the same time. PC Picasso comes with a disk containing a computer drawing program plus puzzles and challenges for better quality learning.

Cat B-6704 **\$39<sup>95</sup>**



## The Uncensored Leisure Suit Larry Bedside Companion

Otherwise known as the 'Nerd's Guide to Picking-up Girls!' Covers all the games in the Leisure Suit Larry series. It's hilarious and packed with explicit answers, clues and hints to all of Larry's games. You'll find Larry's own descriptions of his amorous adventures, take a step-by-step walk through each game, and see detailed maps and 'how to score' lists for each game.

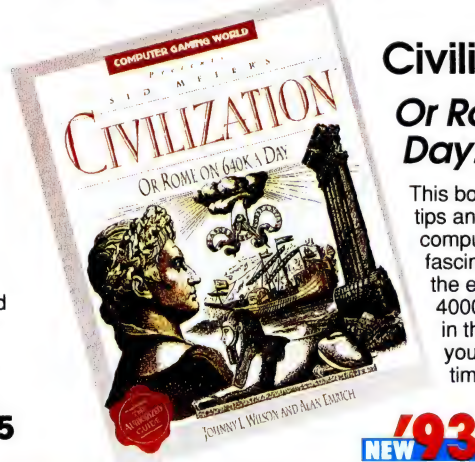
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## Aviation and Space Science Projects

Dr. Ben Millsbaugh - 133 pages  
How do you build a better paper plane? This fascinating book is designed to be fun, as well as a learning experience for kids (or anyone) interested in aviation and spaceflight. Includes a fantastic range of projects that are inexpensive and easy to build.

Cat B-6702 **\$16<sup>95</sup>**

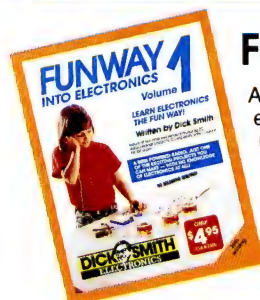


## Civilization Or Rome on 640K a Day!

This book not only gives you all the tips and tricks to this amazing computer game, but it's also a fascinating insight into history from the earliest records around 4000BC to the conquest of space in the 21st century. A must if you're a Civilisation fanatic or a time traveller!

Cat B-6805 **\$39<sup>95</sup>**

## A FUNWAY INTO ELECTRONICS



### Funway 1

An outstanding educational aid! It's used by colleges and schools throughout the country. Funway 1 is the easiest way to start in electronics. It assumes you know nothing, and shows you what the

components look like, how to connect them and how to build 20 fascinating projects.

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### Funway 2

The next step in the superb Funway series. Volume Two shows you how to work with printed circuit boards, how to solder and how to use a multimeter. Plus there's 20 useful projects to build.

Finish this one and you're on the way to becoming an electronics expert.

Cat B-2605 **\$6<sup>95</sup>**



### Funway 3

Once you've completed Volume Three, you'll be ready to tackle virtually any of the Dick Smith Electronics projects. There are over 100 pages for the more

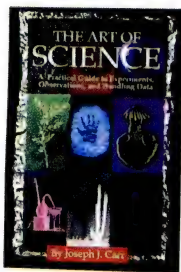
advanced hobbyist. With ten great projects which can be built in a number of forms, so there are almost as many projects in Funway 3 as there are in Funway 1 & 2 combined.

Cat B-2610 **\$6<sup>95</sup>**



# Books - Electronics Theory & Projects

## The Art of Science



Joseph J Carr  
A must for beginners or experienced experimenters alike. This practical guide to Experiment, Observation and Handling Data illustrates the common sense approach to scientific investigation. Whether you're into electronics or any other scientific field, you'll find it entertaining and informative. 'The Art of Science' covers all stages

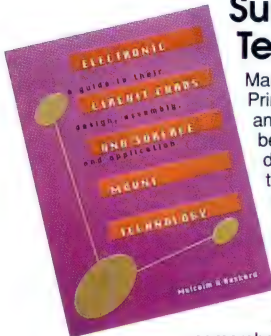
of scientific practice from choosing a field of experimentation through to record-keeping and presenting your results.

**'93**

Cat B-1300

**\$37<sup>95</sup>**

## Electronic Circuit Cards and Surface-Mount Technology



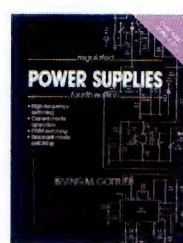
Malcolm R. Haskard - 227 pages  
Printed circuit board (PCB) design and manufacture the way it should be done! Whether you build and design your own PCB's, you're thinking about manufacture, or you're a buyer; this book tells you everything you need to know. Covers international standards, materials and processes including a practical guide to ordering and testing components. One of the most comprehensive guides to PCB's available.

**'93**

Cat B-1620

**\$49<sup>95</sup>**

## Regulated Power Supplies

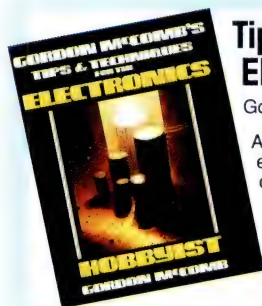


Irving M. Gottlieb  
This fourth edition has been expanded and updated to include all the latest information on one of the most essential pieces of circuitry in electronic equipment. The writing style is technically precise with detailed descriptions of regulation techniques, static and dynamic characteristics, and components. There's a detailed discussion of the circuitry and operation of solid state regulators and numerous circuit designs to fit almost any.

**'93**

Cat B-1746

**\$49<sup>95</sup>**



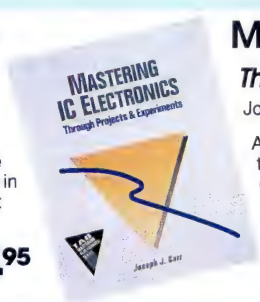
## Tips & Techniques for the Electronics Hobbyist

Gordon McComb - 270 pages

A concise reference, and easy to follow guide to electronics. It's a great source of ideas and advice on everything from parts & supplies, to safety tips in the workshop. As an introduction to electronics, it gives straight-forward answers to the most commonly asked questions.

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**\$34<sup>95</sup>**



## Mastering IC Electronics Through Projects & Experiments

Joseph J. Carr - 406 pages

All the information you need to become familiar with the theory and operation of integrated circuits! Covers IC timers, oscillators and all types of waveshape generators. Through a unique blend of theory and practical experiments you'll end up with a full working knowledge of component specifications, design standards and applications for all kinds of modern ICs.

Cat B-1612

**\$39<sup>95</sup>**

## Attention all Spies! 14 FM Bugs to Build

Colin Mitchell



A great book with fourteen ways to build miniature bugs (FM receivers). It's easy and fun to read and it shows you how you can put these bugs to use.

A quality publication from Talking Electronics.

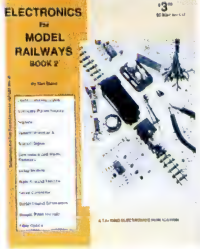
**'93**

Cat B-3650

**\$3<sup>50</sup>**

## Electronics for Model Railways

Ken Stone

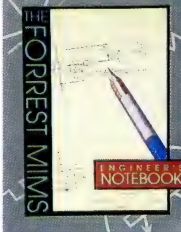


The second book in this popular series. It's a beautifully practical and easy to follow guide to electronics in model railways covering: Level crossing lights, signals, tunnel stretchers, fibre optics, computers & railways and more. A must for the railways enthusiast.

Cat B-3642

**\$3<sup>80</sup>**

## The Forrest Mims... Engineering Hand-book



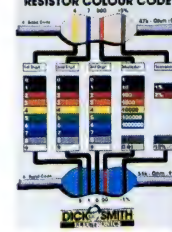
A goldmine of integrated circuit designs and ideas! Everything is handwritten and drawn to successfully create the 'feel' of lab notes. There's a huge array of tested and proven circuit designs and applications. This series has become a n essential reference source for engineers, teachers, experimenters and students alike.

**'93**

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## Resistor Colour Code Chart



**Ideal for students**

A fantastically useful colour code chart for interpreting 1st, 2nd, & 3rd levels, as well as multiplier and tolerance levels for both four and five band resistors. It measures 595 x 420mm so it's easy to read and interpret. Ideal for technicians, hobbyists and students; anyone working with electronics

**'93**

Cat B-1000

**\$3<sup>95</sup>**

## Amplifier Circuit Encyclopaedia

Rudolf F Graf



A fantastic time and frustration saver for anyone into building and designing amplifier circuits! Over 250 proven designs ready-to-build for just about any application. Why waste time designing circuits

when all the difficult work has already been done? It's the essential reference source for experimenters, designers, technicians or beginners.

**'93**

Cat B-1744

**\$29<sup>95</sup>**

## Oscillator Circuit Encyclopaedia

Rudolf F. Graf



You'll save yourself hours or even days of painstaking work with these ready-to-use oscillator circuit designs. Over 250 tried and proven designs ready for you to adapt to virtually any project. It's fascinating, informative and easy to follow, and it covers sixteen of the major types of circuit designs including: Audio, Burst, Sine-Wave, TTL, RF, Crystal and more.

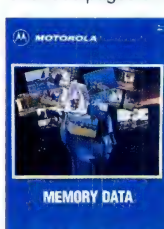
**'93**

Cat B-1742

**\$29<sup>95</sup>**

## Motorola Memory Data

Over 500 pages on Motorola memories.



Includes complete specifications in the form of data sheets. With a selector guide, which makes choosing the best combination of circuits easy. Data includes CMOS Dynamic RAMs, DRAM modules, RAMs, MOS EPROMs and reliability data. As well, it has mechanical data, military products and application information.

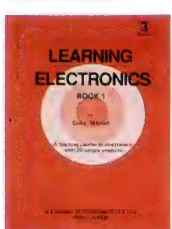
**'93**

Cat B-5402

**\$19<sup>95</sup>**

## Learning Electronics Series

Colin Mitchell



These Talking Electronics publications are incredibly popular because they're incredibly good. Designed for the beginner, they're amazingly easy to follow with hundreds of illustrations to take you through the step-by-step lessons in both practice and theory.

Learning Electronics Book 1

Cat B-3670

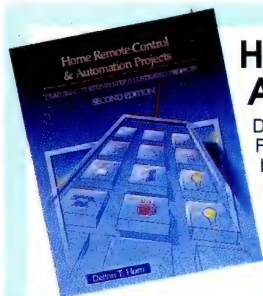
Learning Electronics Book 2

Cat B-3672

**'93**

**\$3<sup>50</sup> ea**





## Home Remote-Control & Automation Projects

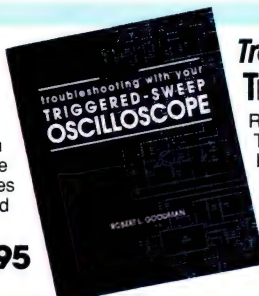
Delton T. Horn

Features 77 step-by-step illustrated projects you can build. This is an excellent introduction to how remote control and automation systems work. Horn provides you with complete instructions, wiring diagrams and illustrations to help make construction as easy as possible.

**NEW '93**

Cat B-1614

**\$39<sup>95</sup>**



## Troubleshooting with your... Triggered Sweep Oscilloscope

Robert L. Goodman

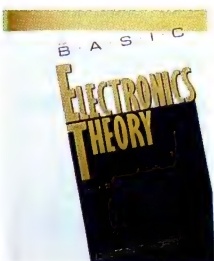
This book is essential if you own or if you're thinking about buying an oscilloscope! It's the definitive guide to how to get the most from your oscilloscope, and shows you how many procedures can be done quickly and easily. If you've always wondered how to make better use of your Cro, this is the book to tell you how.

**NEW '93**

Cat B-4801

**\$39<sup>95</sup>**

## Basic Electronics Theory



Delton T. Horn - 532 pages. The 3rd edition! This superb publication starts off with the basic principles of electronics and ends up with computers.

There's all the information you need for almost any device or circuit. This book is a great reference source for students or technicians.

**\$39<sup>95</sup>**

Cat B-1615

## 101 Optoelectronic Projects



Delton T. Horn

A storehouse of optoelectronic projects just waiting to be put to use. 101 new projects in an exploration of the vast potential offered by optoelectronic devices. You'll find new and exciting ways to apply these projects to your own designs and projects. Both theory and applications are covered in detail.

**\$29<sup>95</sup>**

Cat B-1617

## Wire & Cable for Electronics



Neil Slater

You won't believe how much there is to know about wire and cable. This easy to use reference guide on design, production and maintenance of the latest wire and cable assemblies is a wealth of invaluable information. It'll keep you up to date with the latest conductor technology. Gives a comprehensive overview of the latest wire & cable technology with the merit and uses of each wire.

**\$49<sup>95</sup>**

Cat B-1618

## Mastering Solid State Amplifiers



Joseph J. Carr - 286 pages.

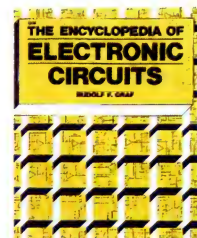
A well presented, well written and practical self-study course on solid-state amplifiers. Combines theory, practical experiments and projects to give

you a full working knowledge of component specifications, design standards and applications. It's packed with illustrations to make mastering amplifier technology easy.

**\$39<sup>95</sup>**

Cat B-1756

## Encyclopaedia of Electronic Circuits Vol 2



Rudolph F. Graf - 768 pages

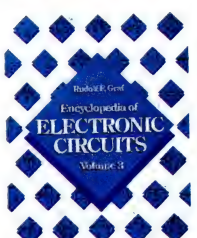
A giant circuit book with over 700 of the most widely used, state-of-the-art electronic circuits ever compiled in a

single source. Covers over 100 circuit categories. Includes a fantastic source section and a specially keyed, cross-referenced index.

**\$54<sup>95</sup>**

Cat B-1758

## Encyclopaedia of Electronic Circuits Vol 3



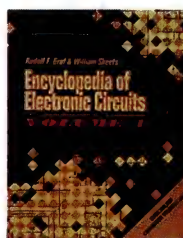
Rudolph F. Graf - 750 Pages

Every edition of this book gets better. Hundreds of all new circuits for alarm and security systems, a huge variety of detector circuits, capacitance, voltage and frequency meters, computer and laser circuits, amplifiers and much more!

**\$56<sup>95</sup>**

Cat B-1760

## Encyclopaedia of Electronic Circuits Vol 4



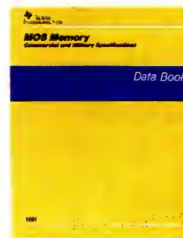
Rudolph F. Graf - 729 Pages

The latest in this fantastic series. There are hundreds of schematics for the most up-to-date electronics circuits from the worlds leading component manufacturers. With 104 fascinating chapters covering everything from Active Antennas to Wireless Microphones. It's a must for the hobbyist or technician.

**\$59<sup>95</sup>**

Cat B-1762

## Texas Instruments MOS Memory Data-book



The complete commercial and military specifications on the MOS Memory product line including DRAMS, SIPs,

EPROMS, OTP PROMS, Flash EEPROMS, ASMs and more. Virtually every detail available, at your fingertips. A must for designers, hobbyists and technicians

**\$19<sup>95</sup>**

Cat B-5527

## Towers International Transistor Selector

Update 4 - 430 pages



The most user-friendly short-form transistor characteristic/substitution book on the market. This edition offers over 2,000 new entries and a new surface-mount cross index. There are also over 29,000 American,

British, European and Japanese transistors, with electrical and mechanical specifications, and available substitutes.

**\$49<sup>95</sup>**

Cat B-4600

## Magazine Binders



A hard-spine magazine binder that's designed to protect those monthly mags. It'll hold 12 issues up to a maximum size of 280 x 210mm. Complete with metal rods to secure

your mags fast and easy.

Cat B-4045

**\$9<sup>95</sup>**

## A Guide to NiCad Batteries

Everything you ever wanted to know about NiCad batteries! You'll find it easier to choose the right battery, as well as how to get them to last longer. Includes information on charge/discharge, battery capacity and life characteristics.

**95c**

Cat B-6040

## Introductory Electronics



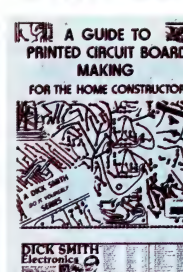
A superb introductory text designed for people who have no prior knowledge of electronics. It starts with basic theories and, using well defined chapters and exercises, it takes you

through to the construction of electronic circuits.

**\$19<sup>95</sup>**

Cat B-3635

## How to Make Your Own PCB



A great guide that shows you how to make your own PCB's for projects and experiments. It assumes you know nothing, so even as a complete novice you

won't have any trouble. You'll end up with a professional-looking job, and save money as well.

**\$19<sup>95</sup>**

Cat B-6005



## Scanner Fanatics' Frequency Registers



The complete listing of scanner frequencies covering the 35MHz to 900MHz range. If you want to listen in, you'll almost certainly find the frequency in these books: Ambulance, Police, State Emergency Services, Aviation, plus hundreds of commercial frequencies. All the scanners listed in the series operate over 5 watts or more.

**NSW** Cat B-4102  
**Queensland** Cat B-4108  
**Victoria** Cat B-4104  
**West Australia** Cat B-4106

**\$24<sup>95</sup> ea**

## Register of Government Radio Frequencies NSW/ACT/ Victoria



A frequency list of Government services in NSW, Canberra and Victoria. Includes frequency allocations and radio codes for Police, Fire Brigades, State Emergency Centres and more. Other frequency allocations include Foreign Embassies, QANTAS airways... even the department of defence.

Cat B-4100 **\$29<sup>95</sup>** **NEW '93**

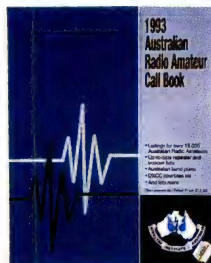
## For Radio Amateurs... Digital Communications



Jonathon L. Mayo, KR3T  
This one's imperative for anyone into, or thinking about getting into, packet radio. There's detailed information on the wide variety of digital modes now available, in-depth discussion on protocol and comprehensive information on how to set up a real digital communications station. Plus, there are extensive appendices covering everything from code charts to operating frequencies.

Cat B-2405 **\$29<sup>95</sup>**

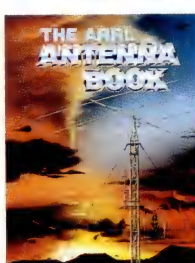
## Limited Stocks! WIA Australian Radio Amateur Call Book



1993 Edition! The complete, up to the minute listing with valuable information about all members listed on the Wireless Institute of Australia (WIA) data base. Covers call signs, suffixes, shortwave, Department of Transport & Communications information and more.

Cat B-2335 **\$12<sup>50</sup>**

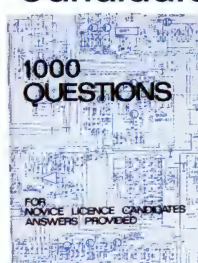
## 16th Edition ARRL Antenna Hand - book



The latest ARRL antenna handbook! Comprehensive discussions and principles on virtually all aspects of antenna design and performance. Examples of hundreds of antennas with full construction details.

Cat B-2209 **\$39<sup>95</sup>**

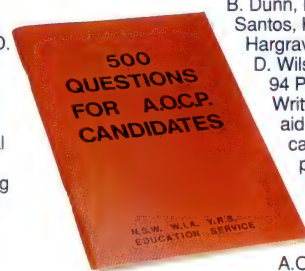
## 1000 Questions For Novice Candidates



K. Hargraves, D. Wilson & R. Black - 116 Pages. Published by W.I.A. Essential reading for anyone studying for their Novice licence. Asks the questions most likely to arise in the exams. Covers laws, regulations, test equipment, etc.

Cat B-2316 **\$9<sup>95</sup>**

## 500 Questions For A.O.C.P. Candidates



B. Dunn, F. Santos, K. Hargraves, D. Wilson - 94 Pages. Written to aid candidates preparing for the multiple choice format A.O.C.P. exams. With 500 questions and answers, plus a proposed syllabus for study.

Cat B-2318 **\$9<sup>95</sup>**

## The "Screwdriver Expert's" Guide

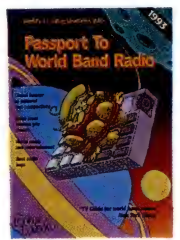


Lou Franklin - 97 Pages  
The do-it-yourself CB repairs and modifications manual for the avid CB'er with little electronics knowledge. Shows how to 'peak' your transmitter,

modulator and receiver for the greatest range. Plus diagnosis and repair of the most common CB faults.

Cat B-2324 **\$19<sup>95</sup>**

## Passport To World Band Radio



This book is imperative for anyone who's getting started with a shortwave receiver. It's the latest 1993 edition and it includes all the changes that have taken place in Europe and Russia. If you want to know

what's on shortwave radio, the best and worst radios, how to get the most from your shortwave listening and more, it's all here.

Cat B-2052 **\$39<sup>95</sup>**

## Your Gateway to..... Packet Radio

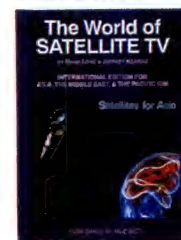


Stan Horzepa, WA1LOU  
What is packet radio and what does it have to offer the 'average HAM'? This incredibly useful book on how to set up the necessary equipment is a must. What's more, it explains protocols in detail and discusses where packet radio is headed.

A comprehensive guide to packet radio.

Cat B-2402 **\$24<sup>95</sup>** **NEW '93**

## The World of Satellite TV



Mark Long & Jeffrey Keating  
The authoritative guide to home satellite TV for Asia, the Middle East and the Pacific Rim. Everything you need to know about selecting, installing,

operating and maintaining your own satellite TV system. With maps, chart and satellite footprints it's a must for both newcomers and experienced satellite TV viewers.

Cat B-2321 **\$29<sup>95</sup>** **NEW '93**

## Yaesu Logbook



Yaesu 50 Pages. The ideal finishing touch for your amateur radio station! Provision for all QSO details, including QSL data.

Cat B-2029 **\$9<sup>95</sup>**

## Radio In Australia



Robin Davies 65 pages  
Radio in Australia or Where you can hear it is a great little

pocket-sized publication with a comprehensive list of Australia's radio stations. It's so easy to follow with colour coding for FM & AM, area maps & more!

Cat B-2300 **\$4<sup>90</sup>**

## Novice Electronics

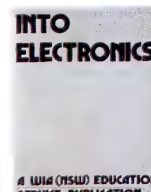


W.I.A. 136 Pages.  
Aims to complete the knowledge needed to attempt the theory examination of the DOTC Novice Amateur Operator's Certificate. Each chapter has a summary of terms

and revision questions.

Cat B-2317 **\$9<sup>95</sup>**

## Into Electronics



W.I.A. - 86 Pages.  
An excellent introductory course providing information on the fundamental theories of electronics. Each chapter has simple experiments and revision questions. Highly-

recommended for anyone starting out in electronics as well as those studying for their amateur licence.

Cat B-2313 **\$9<sup>95</sup>**



## Tomcat's Big.... CB Handbook



Tom Kneitel  
The world's most widely read CB expert's guide to AM and SSB CB operations. This 221 page, fully illustrated book tell how to get the most from your CB. Includes CB Handles; their meanings and uses, the best operating techniques for AM, special SSB protocol, a complete CB jargon dictionary, equipment, troubleshooting and more. The one book all CB'ers should own!

**EXCLUSIVE TO  
DICK SMITH ELECTRONICS**  
**'93**  
NEW

Cat B-2500

**\$39<sup>95</sup>**

## Listening In To.... Aircraft Radio



Bob Bell  
The most comprehensive monitors guide to air traffic frequencies, terminology and procedures available! Tells you where to find air traffic control, military aircraft frequencies, commercial and domestic aircraft frequencies, air ambulance, aeronautical beacon stations.... the lot. There are also great articles on aeronautical addressing and reporting, typical messages, tracking an aircraft in flight and a list of books and magazines to enhance your monitoring.

**'93**  
NEW

Cat B-4112

**\$24<sup>95</sup>**

## For professionals! Understanding & Repairing CB Radios



Lou Franklin - 366 pages  
A great reference guide for the technician or hobbyist. Provides a comprehensive guide through theory and basic trouble-shooting techniques for CB. There's a thorough analysis of virtually every type of circuit found in CB's.

Cat B2327

**\$36<sup>95</sup>**

## Dick Smith's Australian Frequency Hand-book

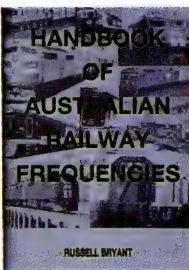


Jack McDonald  
An essential book for anyone into scanning. This latest edition has information on using your scanner, as well as understanding codes & marine bands. What's more, there's a glossary of scanner terms, frequency directory and more!

Cat B-9601

**\$14<sup>95</sup>**

## Australian Railway Frequencies Handbook



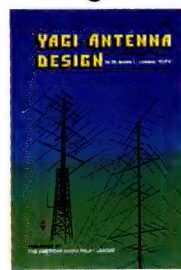
Russell Bryant  
Railways enthusiasts and avid scanner fanatics will love this one! It gives a complete listing of Australian Railways (and New Zealand Railways) radio frequencies, glossary of railway terms, an

explanation of radio terms, track and gauge data, locomotive rosters and system maps.

Cat B-4114

**\$19<sup>95</sup>**

## Yagi Antenna Design



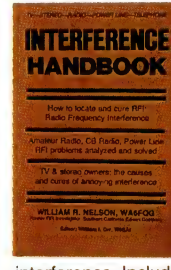
Dr. James L. Lawson, W2PV  
Published by the ARRL! Includes both theory and practical information needed to understand this popular antenna. All aspects of the design of Yagis are methodically and clearly

illustrated. Taken from talks, lectures and articles by the man considered the world expert on Yagis.

Cat B-2105

**\$32<sup>95</sup>**

## Interference Handbook



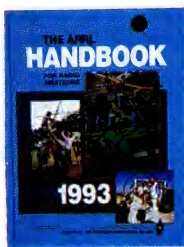
William R. Nelson, WA6FQG - 250 pages  
The latest version, completely updated and rewritten! It covers the entire field of radio frequency interference (RFI). With concise explanations of the causes and cures of annoying

interference. Includes common problems and solutions regarding TV, stereo, radio, telephone, amateur radio and CB equipment. Ideal for Ham operators and CB'ers.

Cat B-2401

**\$26<sup>95</sup>**

## ARRL Radio Handbook



The new 1993 edition! All the latest information for the avid amateur radio operator with even more articles, many more new projects to build and a wealth of information. This is of course, the amateur radio

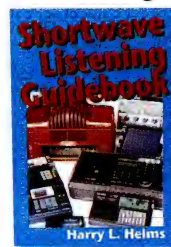
operators bible, and this latest edition continues to live up to its reputation.

**'93**  
NEW

Cat B-2226

**\$49<sup>95</sup>**

## Shortwave Listening Guide



Harry L. Helms  
The whole world's taking on shortwave radio and this book tells how to listen in! This amazing book tells you everything you need to know about shortwave; selecting the right shortwave radio, how reception conditions vary,

how to operate a shortwave radio correctly, profiles of international stations and more.

Cat B-2040

**\$29<sup>95</sup>**

## World Radio TV Handbook 1993



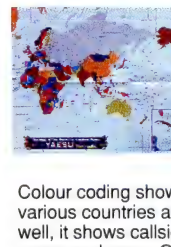
The ultimate directory of international radio and television. Gives complete listings including frequencies, addresses, call signs, station identification and transmission times. There's even a special feature on

how to convert local time against UTC.

Cat B-2093

**\$39<sup>95</sup>**

## Amateur Radio Map Of The World



If you're into Amateur radio, then here's a map of the world you shouldn't be without!

Colour coding shows callsign areas for various countries around the world. As well, it shows callsign prefixes, world zones and more. On the reverse side is a colour map of Japan. (46cm x 65cm).

Cat B-2030

**\$4<sup>95</sup>**

## AX.25 Amateur Packet- Radio



Link-Layer Protocol  
A fantastic guide to the design and use of amateur packet-radio systems in order to ensure link-layer compatibility

between stations. Defines the protocol to be used between two amateur radio stations in point-to-point communications environments.

Cat B-2403

**\$18<sup>95</sup>**

## The ARRL Satellite Anthology



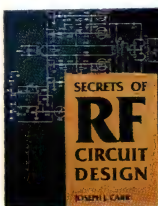
The latest information on OSCARs 9 - 13 and RS satellites. Includes a detailed description of Phase 3 satellites (OSCARs 10 & 13) operation. As well it

has the popular series "Adventures in Satellite DXing & Working OSCAR - the Basics"... and more!

Cat B-2400

**\$18<sup>95</sup>**

## Secrets of RF Circuits



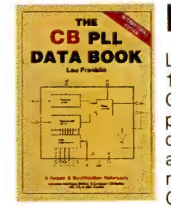
Joseph J. Carr  
Here's the book that demystifies radio frequency! In clear non-technical language, it explains what RF is, how it works and how it differs from other electromagnetic frequencies.

It's packed with diagrams and equations on everything from antennas to transistors, plus projects and designs to build.

Cat B-2311

**\$39<sup>95</sup>**

## CB PLL Data Book



Lou Franklin  
100 Pages  
Contains details of phase locked loop circuits used in just about every CB ever made! If you repair CB's... this one is indispensable. Gives technical data you just won't find anywhere else.

Cat B-2326

**\$19<sup>95</sup>**



# DATA SECTION

The Dick Smith Electronics catalogue is much more than a stage for new products.... It's an indispensable source of valuable information for the hobbyist, tradesman, student and technician. Our famous 'Data Section' is bigger and better, and it's been fully revised to give you more up-to-date information, and more handy hints than ever before. It's little wonder that it's used by schools and colleges throughout the country.

All material has been designed and compiled by our Research & Development Department. No other catalogue in the country gives you so much. In fact, it's so good, you'll often find sections copied, or should we say borrowed, by lesser quality publications. So, when you need accurate, useful and comprehensive information on hand... reach straight for your Dick Smith Electronics 'Data Section'.

## BATTERY REPLACEMENT GUIDE

Type Nos. Voltage Size/Type

Replaces Other Type Nos:

### GENERAL PURPOSE HEAVY DUTY

1015	S-3100	1.5	AA	Carbon Zinc	R6C	UM3-DE	15	M15R	UM3	R6TR	HR6
1035	S-3102	1.5	C	Carbon Zinc	R14C	UM2-DE	14	M14R	UM2	R14TR	HR14
1050	S-3104	1.5	D	Carbon Zinc	R20C	UM1-DE	13	M13R	UM1	R20TR	HR20
216	S-3106	9	Radio	Carbon Zinc	6F22	006P-DE	PP3	2022	6F22TR	H6F22	M1604

### EXTRA HEAVY DUTY

1215	S-3110	1.5	AA	Carbon Zinc	R6P	UM3-NE	15D	M15HD	SUM3	R6HD	ER6
1235	S-3112	1.5	C	Carbon Zinc	R14P	UM2-NE	14D	M14HD	SUM2	R14HD	ER14
1250	S-3114	1.5	D	Carbon Zinc	R20P	UM1-NE	13D	M13HD	SUM1	R20HD	ER20

### ALKALINE

E90	S-3288	1.5	N	Alkaline	LR1	AM5	MN9100	4001	L20	910A
E91	S-3281	1.5	AA	Alkaline	LR6	AM3	MN1500	4006	L40	
E92	S-3278	1.5	AAA	Alkaline	LR3	AM4	MN2400	4003	L30	
E93	S-3282	1.5	C	Alkaline	LR14	AM2	MN1400	14A		
E95	S-3284	1.5	D	Alkaline	LR20	AM1	MN1300	13A	4020	L90
E96	S-3275	1.5	AAAA	Alkaline						522
S-3286	9	Radio	Alkaline	6LR61	6AM6	MN1604	1604	4022	6L10	6LF22

### LANTERN BATTERIES

509	S-3240	6	'Dolphin'	Carbon Zinc	4R25S	4F	908	M908	431	4R25	996
529	S-3245	6	'Dolphin'	Alkaline	4LR25	908A	MN9080	509	1209		
731	S-3244	6	'Big Jim'	Carbon Zinc	4R25S-2	4F2	918	M918	4R25-2991		
732	S-3242	12	'Big Jim'	Carbon Zinc	8R25	9FD	926	M926	TW2		
1209	S-3247	6	'Dolphin'	Carbon Zinc	4R25P	4F	908D	H4R25	430	96PP	509
1231	S-3248	6	'Big Jim'	Carbon Zinc	4R25P-2	4F2	918D	H4R25-2	731		

### PHOTOGRAPHIC / SPECIAL PURPOSE

A23	S-3335	12	N	Alkaline	DL1/3N	CR1/3N					
2L76	S-3060	3		Lithium	GM13	G13	RS76	MS76	EPX76		
S76	S-3080	1.5		Silver Oxide	LR1	AM5	MN9100	910A	4001	L20	
N	S-3288	1.5		Alkaline	7K67	867	4018				
J539	S-3072	6		Alkaline	4LR44	7250	PX28	537	7H34	544	
A544	S-3289	6		Alkaline	T164	HM-4N	TR164	V164PX			
E164	S-3074	5.6		Mercury Oxide	T400N	H-B	RM400R	V400PX			
E400N	S-3076	1.3		Mercury Oxide	RM401H	RM401					
E401	S-3070	1.4		Mercury Oxide							
EL2CR5	S-3068	6		Lithium	DL223A	BR-P2					
EL223AP	S-3067	6		Lithium	PX675	HS-C	H-C	RPX675	4677		
EPX675	S-3066	1.35		Mercury Oxide							

### CALCULATOR / GAMES

A76	S-3061	1.5	High Drain	Alkaline	LR44	VG13A	RW82	4276	4176	EPX76	G13
					S76	357	AG13	5244			
186	S-3062	1.5	High Drain	Alkaline	LR43	VG12GA	RW84	4278	8007	GP86	G12
					548	386	AG12	10L124	SR43W	86A	D386
189	S-3063	1.5	High Drain	Alkaline	LR54	V10GA	RW89	4274	8019	GP89	G10
					289	389	10L122	SRW1130	LR1130	A120	89A
EL123AP	S-3334	3		Lithium	CR123A	BR123A	DL123A				
ECR1220	S-3337	3	Low Drain	Lithium	CR1220	BR1220	DL1220				
ECR1616	S-3333	3		Lithium	CR1616	BR1616	DL1616				
ECR2016	S-3332	3		Lithium	CR2016	BR2016	DL2016				
ECR2025	S-3330	3		Lithium	CR2025	BR2025	DL2025				
ECR2032	S-3331	3		Lithium	CR2032	BR2032	DL2032				
ECR2430	S-3336	3		Lithium	CR2430	BR2430	DL2430				

### WATCH / HEARING AID

AC13E	S-3039	1.4		Zinc Air	DA13	L13Z	AC13	13HPX	R13ZA	13A	
AC312E	S-3040	1.4		Zinc Air	DA312	L312ZA	AC312	312HPX	R312ZA	312A	
AC675E	S-3038	1.4		Zinc Air	DA675	L6752A	AC675	675HPX	R6752A		
357	S-3293	1.5	High Drain	Silver Oxide	G13	J	SR44W	541	D357	SR44	7
362	S-3050	1.5	Low Drain	Silver Oxide	G11	SR721SW	532	TR721SW	19		
364	S-3051	1.5	Low Drain	Silver Oxide	G1	SR621SW	531	TR621SW	31		
371	S-3056	1.5	Low Drain	Silver Oxide	SR69	SB-AN	V371	SR920SW	30		
377	S-3055	1.5	Low Drain	Silver Oxide	BA	SR626SW	D2V	37	39	V377	
379	S-3298	1.5	Low Drain	Silver Oxide	SR521SW	JA	V379	50			
381	S-3291	1.5	Low Drain	Silver Oxide	SR1120SW	SB-DS	34	V381			
384	S-3052	1.5	Low Drain	Silver Oxide	SR41SW	527	D384	TR41SW	10		
386	S-3295	1.5	High Drain	Silver Oxide	G12	H	SR43W	548	D386	SR43	186
389	S-3292	1.5	High Drain	Silver Oxide	G10	SR1130W	554	D389	SR54	189	17
390	S-3294	1.5	Low Drain	Silver Oxide	SR1130SW	SB-AU	11	V390			
391	S-3296	1.5	High Drain	Silver Oxide	G8	SR1120W	553	D391	SR55	TR1120W	191
392	S-3299	1.5	High Drain	Silver Oxide	G3	K	SR41W	547	D392	SR41	TR41W
393	S-3053	1.5	High Drain	Silver Oxide	G5	F	546	D393	15		
396	S-3049	1.5	High Drain	Silver Oxide	G2	SR726W	556	SR59	29		
397	S-3054	1.5	Low Drain	Silver Oxide	G2	SR726SW	536	TR726SW	26		

Please Note:

Not all devices shown in this section are stocked by Dick Smith Electronics. While every effort is made to ensure that this data is correct and as up-to-date as possible, no responsibility will be accepted for its use or consequences arising from its use. If in doubt, please consult the manufacturer's data sheets.



# COMPONENTS

Correctly identifying electronic parts can be one of the most difficult tasks facing someone building or repairing electronic equipment. As components become ever smaller to allow higher density circuit boards, it is increasingly difficult to distinguish the different types such as resistors, capacitors, inductors and subminiature fuses.

Knowing what markings to expect can be a big help when faced with a circuit board full of unfamiliar components. The information presented here, combined with a basic understanding of components, should enable you to correctly identify those most commonly used.

## PREFERRED VALUES

The system of preferred values, which is used for resistors, capacitors and inductors, was developed to provide a logical progression from one value to the next, where each value represents an increase by an approximately constant percentage. Depending on the tolerance of the particular components, there can be between 3 and 192 preferred values in each decade. The more common series are shown in the tables below. Values given for each series are repeated in every decade.

3 Per Decade (50% tolerance)

10 22 47

12 Per Decade (10% tolerance)

10 12 15 18 22 27 33 39  
47 56 68 82

24 Per Decade (5% tolerance)

10 11 12 13 15 16 18 20  
22 24 27 30 33 36 39 43  
47 51 56 62 68 75 82 91

## DECIMAL MULTIPLIERS

Decimal multiplier prefixes are in common use to simplify and shorten the notations of quantities such as component values.

Capacitance, for example, is measured in Farads. But the Farad is far too large a unit to be of practical use in most cases. For convenience we use sub-multiples to save a lot of figures. For example, instead of writing 0.000000000001 Farads, we write 1pF (1 picofarad).

The more common prefixes and the relationships to one another are as follows.

Abbrev.	Prefix	Multiply by	or
p	pico	0.000000000001	10 <sup>-12</sup>
n	nano	0.000000001	10 <sup>-9</sup>
u	micro	0.000001	10 <sup>-6</sup>
m	milli	0.001	10 <sup>-3</sup>
-	UNIT	1	10 <sup>0</sup>
k	kilo	1000	10 <sup>3</sup>
M	mega	1000000	10 <sup>6</sup>

1000 pico units = 1 nano unit  
1000 nano units = 1 micro unit  
1000 micro units = 1 milli unit  
1000 milli units = 1 unit  
1000 units = 1 kilo unit  
1000 kilo units = 1 mega unit

## CIRCUIT NOTATION

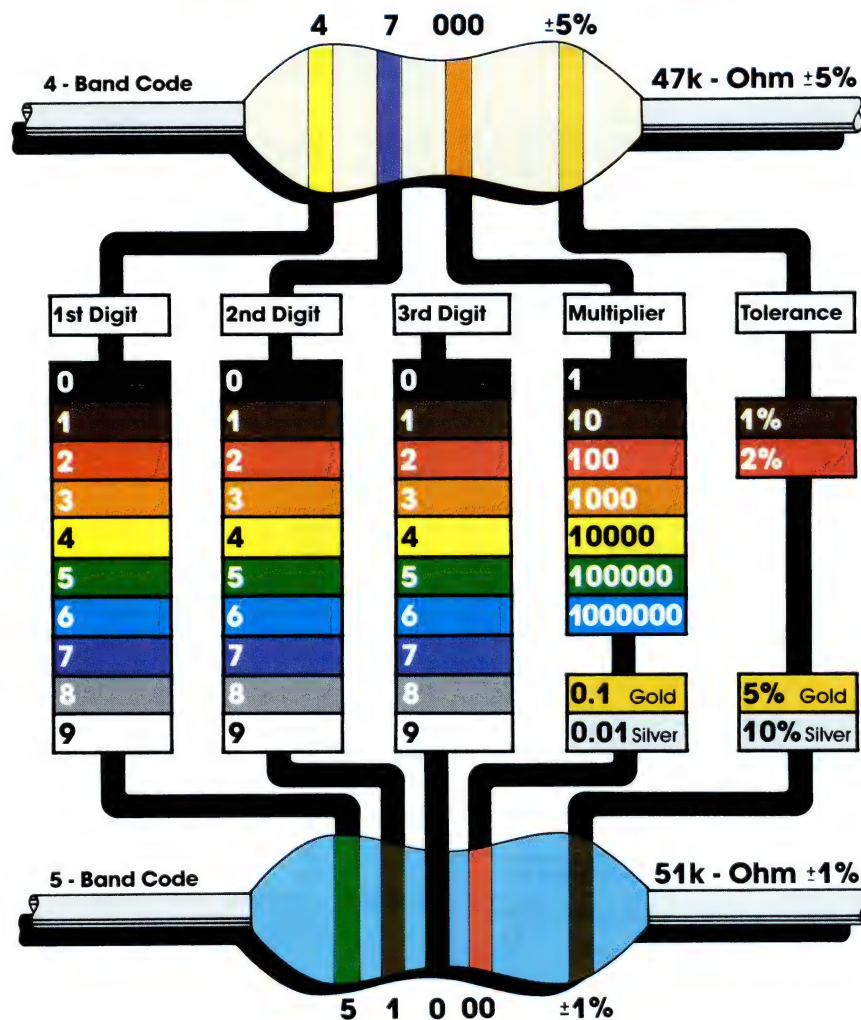
Some circuits give component values as they are normally spoken - e.g. 4.7pF for 4.7 picofarads, 5.6nH for 5.6 nanohenries. Others replace the decimal point with the first letter of the sub-multiple - e.g. 5n6 for a 5.6nF capacitor or a 5.6nH inductor. Similarly for resistors, 6k8 is the same as 6.8k ohms while 1R5 would mean 1.5 ohms.

## TOLERANCE

All components differ from their marked value by some amount. Tolerance specifies the maximum allowed deviation from the specified value. Tolerances are normally expressed as a percentage of the nominal value.

As an example, a component with a marked value of 100 and a tolerance of 5%, could actually be any value between 5% below the marked value (95), and 5% above the marked value (105).

# RESISTOR COLOUR CODE



Full size copies of this chart are available from all stores (Cat B-1000)

## RESISTORS

Most resistors are so small that it is impractical to print their values on them using normal numeric characters. Instead, they are marked using a code of coloured bands.

Resistors made to tolerance of 5% and 10% are marked with 4 bands while higher precision types, such as 2%, 1% or better, may be marked with 5 bands to allow for an extra digit of precision.

### How to read 4 band codes:

At one end of the resistor there will be a gold, silver or brown tolerance band. This band is usually spaced apart from the other three bands. Start with the band nearest to the other end. Its colour represents the first digit of the resistor's value, as shown in the colour code chart. The next band represents the second digit of the resistor's value. The third band represents the decimal multiplier, that is, it represents the number of zeroes that we have to put after the first two digits to arrive at the resistor's value. The final band gives us the tolerance of the resistor, silver for 10% types, gold for 5% types, brown for 1% types.

Let's take the carbon film resistor shown in the colour chart as an example. Its first band is brown and the second band is black, representing '0'. The third band, the multiplier, is red which tells us to add 2 zeroes to the number that we already have. This is the same as multiplying it by 100. Thus the value of the resistor is '1000', one thousand ohms. Finally the fourth band, being gold, indicates that the resistor has a 5% tolerance, that is, its actual value will be somewhere between about 950 ohms and 1050 ohms.

Some special high-voltage resistors use a yellow tolerance band in lieu of gold. This is simply because the metal particles in the gold paint might compromise the resistor's voltage rating.

### What they mean:

Band one — first figure of value  
Band two — second figure of value  
Band three — number of zeroes/multiplier  
Band four — tolerance

Tolerance band colours: brown 1%, red 2%, gold 5%, silver 10%, none 20%.

### Reading 5 band resistors:

Because the final band on these resistors is usually brown or red, it can be a bit more difficult to know which end to start from. In most cases the first four bands are grouped a bit closer together than the fourth and fifth bands. The first two bands are read the same as they are on the 4 band types. The third band supplies the third digit of the value. The fourth band now becomes the multiplier and the fifth represents the tolerance.

For example, if the 5 bands are, from first to fourth, red/yellow/white/gold/brown, then the three significant digits of the value would be '249', the multiplier would be 0.1, and the tolerance 1%. Hence, this is the code for a 24.9 ohm, 1% resistor.

### What they mean:

Band one — first figure of value  
Band two — second figure of value  
Band three — third figure of value  
Band four — number of zeroes/multiplier  
Band five — tolerance



## CAPACITORS

Capacitors may be marked to show their value, voltage rating, accuracy, temperature stability and other information. Most capacitors are not marked with all of these, however the value and voltage rating are usually given. Identification can be difficult because of the variety of systems in use.

### Units

The unit of capacitance is the FARAD, but this unit is too large in practice. Commonly used smaller units are the microfarad (abbreviated  $\mu\text{F}$ ), nanofarad (nF) and picofarad (pF). The section on decimal multipliers shows the relationship between these.

Some capacitance values are commonly expressed by only one unit while others can be expressed under two or more units. e.g.  $1\mu\text{F}$  would rarely be called  $1000\text{nF}$  and never  $1,000,000\text{pF}$ , even though these are equivalent. However,  $0.0047\mu\text{F}$  is often expressed as  $4.7\text{nF}$ , or as  $4700\text{pF}$ .

### Value

Larger capacitors are marked in microfarads and indicate this by the abbreviations 'uF', 'u' or even the obsolete 'MFD'. Smaller capacitors are marked in nanofarads or picofarads and may abbreviate the unit to 'n' or 'p'.

If the value contains a decimal point the 'u', 'n' or 'p' is sometimes put in place of the decimal point. Therefore a  $4.7\text{pF}$  capacitor can be marked as  $4\text{p}7$ .

If no unit is given, a judgement, based on the capacitor's physical size, must be made to determine which unit is intended. For example, a small ceramic capacitor marked '4.7' is probably  $4.7\text{pF}$ , whereas a large plastic capacitor marked '4.7' is more likely to be  $4.7\mu\text{F}$ . If the value is in nF then this is invariably shown.

Another marking system uses 3 numeric digits to indicate the value in picofarads. The first two digits represent the first two digits of the value and the third digit is the multiplier or number of zero's.

For example, a capacitor marked 104 would be read as 1, 0, 0000. This would be formatted as  $100,000\text{pF}$  and would commonly be known as  $100\text{nF}$  or  $0.1\mu\text{F}$ . Likewise a capacitor marked 472 would be  $4700\text{pF}$ , also known as  $4.7\text{nF}$  or  $.0047\mu\text{F}$ .

A similar system represents these 3 digits using colours, taken from the resistor code, instead of numbers.

Some common values and their possible markings:

microfarads	nanofarads	picofarads	EIA code
0.0001 $\mu\text{F}$ *	0.1n*	100pF	101
0.00022 $\mu\text{F}$ *	0.22n (n22)	220pF	221
0.001 $\mu\text{F}$	1n (1n0)	1,000pF	102
0.0033 $\mu\text{F}$	3.3n (3n3)	3,300pF	332
0.01 $\mu\text{F}$	10n	10,000pF*	103
0.047 $\mu\text{F}$	47n	47,000pF*	473
0.1 $\mu\text{F}$ (u1)	100n	100,000pF*	104
0.82 $\mu\text{F}$ (u82)	820n	820,000pF*	824
1.0 $\mu\text{F}$ (1u0)	1000n*	1,000,000pF*	105

(\*) Not normally expressed in this form

### Voltage Rating

Voltage rating is usually marked and is often identified by the symbol 'V'. Most electrolytic capacitors clearly indicate their voltage rating. Polyester capacitors usually show the voltage rating but often omit the 'V' symbol. Small ceramic capacitors often show no voltage rating.

If the capacitance and voltage rating are both marked, a unit is also marked for at least one of the quantities so that the two cannot be confused.

### Polarity

Polarity sensitive capacitors, such as electrolytics, are usually marked with a '+' or '-' symbol adjacent to one lead to indicate polarity.

### Tolerance

Tolerance indicates how close a capacitor's actual value is likely to be to its marked value.

A tolerance can be marked numerically, as a code consisting of a single letter, or, on colour coded capacitors, as a 4th coloured band. The code letter is usually placed immediately after the value. Commonly used tolerance codes are:

Code	Colour	Tol.	Code	Colour	Tol.
A	—	+20 -10 (2)	L	—	+/- 15%
C	red	+/- 0.25pF (1)	M	black	+/- 20%
D	green	+/- 0.5pF (1)	N	—	+/- 30%
E	white	+/- 1.0pF (1)	P	—	+100 -0
F	brown	+/- 1%	Q (2)	—	+30 -10
G	red	+/- 2%	S	—	+50 -20
J	green	+/- 5%	W	—	+50 -10
K	white	+/- 10%	W (2)	—	+40 -20
			Z	grey	+80 -20

(1) used on capacitors  $\leq 10\text{pF}$  (2) used on electrolytic capacitors

## Temperature Characteristics

All real capacitors exhibit some change in value with varying temperature. Some ceramic type exhibit fairly linear changes & are useful as temperature compensating elements in AC circuits.

The temperature coefficients of these types may be marked in letter codes or designated by a coloured spot.

Tempco Code	EIA Code	JIS Code	Colour Code	Tempco ppm/°C
P100	COG	C	red/violet	+100
NP0	S1G	H	black	0
N30	S1G	H	black	-30
N033	S1G	H	black	-33
N075	U1G	P	brown	-75
N080	U1G	L	red	-80
N150	P2G	P	orange	-150
N220	R2G	R	yellow	-220
N330	S2H	S	green	-330
N470	T2H	T	blue	-470
N750	U2J	U	violet	-750
N1500	P3K	W	Orange/orange	-1500
N2200	R3L			-2200
P350/N1000	SL	SL		+350 to -1000

Capacitors using the JIS code sometimes have a second letter to designate the temperature coefficient's tolerance.

Letter	Tempco Tolerance
G	+/- 30ppm/°C
H	+/- 60ppm/°C
J	+/- 120ppm/°C
K	+/- 250ppm/°C
L	+/- 500ppm/°C

For example, a capacitor marked "CH" would have a temperature coefficient of between  $+60\text{ppm}/^\circ\text{C}$  and  $-60\text{ppm}/^\circ\text{C}$  ("C"=0, "H"=  $+/- 60\text{ppm}/^\circ\text{C}$ ).

Ceramic capacitors with non-linear temperature coefficients sometimes use a 3 digit code to indicate their operating temperature range and their stability over that range.

The 1st character indicates minimum operating temperature, the 2nd, maximum temperature and the 3rd gives the stability over this temperature range.

1st Character	Min Temp. °C	2nd Character	Max Temp. °C
X	-55	5	+85
Y	-30	7	+125
Z	+10		
3rd Character	Stability (%)		
F	+/-7.5		
P	+/-10		
R	+/-15		
S	+/-22		
T	+22/-33		
U	+22/-56		
V	+22/-82		

An example of this is the common 'Z5U' type used in bypass applications. This capacitor operates over the  $+10$  to  $+85^\circ\text{C}$  temperature range and exhibits a stability of  $+22$  to  $-56\%$  over this temperature range.

### Putting it all Together

Knowing how the important information is likely to be marked, we can decode the markings on a capacitor and determine its value, voltage rating, tolerance and sometimes its temperature characteristic.

For example, a capacitor marked 104K 63V Y5P will be  $0.1\mu\text{F}$  (decoded from the 104) having a  $+/- 10\%$  tolerance (decoded from the K), a 63 volt rating, an operating temperature range of  $-30^\circ\text{C}$  to  $+85^\circ\text{C}$  (decoded from Y5) and a stability of  $+/- 10\%$  (P) over this range. Likewise, 6n8K63 would indicate  $6.8\text{nF}$  (from 6n8),  $+/- 10\%$  (from K) and 63 volts (from 63).



104 = 1 0 0000 pF  
 =  $100\text{nF} = 0.1\mu\text{F}$   
 K =  $\pm 10\%$  Tolerance  
 63 = 63 Volts  
 Y =  $-30^\circ\text{C}$   
 5 =  $+85^\circ\text{C}$   
 P =  $\pm 10\%$  Stability

## Film Capacitor Types

KP	Polypropylene film/foil
KS	Polystyrene film/foil
KT	Polyester film/foil
	(polyethylene terephthalate PETP)
MK	Metallized plastic film (general)
MKC	Metallized polycarbonate
MKP	Metallized polypropylene
MKT	Metallized polyester
	(polyethylene terephthalate, PETP)
MKT-P	Metallized polyester/paper
MKY	Metallized low-loss polypropylene
MKL (MKU)	Metallized lacquer (cellulose acetate)

## CAPACITORS & THEIR USES

### Aluminium Electrolytic Capacitors

Ideal for use in filtering or smoothing rectified A.C. and energy storage as in Power Supplies. Also used for bypassing and coupling in audio applications and the timing element for non critical circuits.



### Solid Tantalum Capacitors

Lower leakage High reliability, long life and offer a size advantage.

### Ceramic Capacitors

Offer low cost and high capacitance in a small physical volume. There are generally two types:



High stability, temperature compensating types for use in resonant circuit and filter applications. These have linear temperature characteristics, and their value is largely independent of voltage and frequency.

Bypass and coupling capacitors for use in less critical applications. These are less stable, have non-linear temperature characteristics and are somewhat voltage dependent.

### Paper Capacitors

An original construction of capacitors for use in A.C. circuits. Still used for power factor correction in mains supply applications. For example in lighting and electric motors.

### Polyester Capacitors

Low cost, good stability and available in a large range of values. These are the most widely used capacitors for general purpose applications.

Greencaps and MKT type capacitors are examples of polyester (polyethylene terephthalate) film capacitors.

### Polycarbonate Capacitors

Offer low temperature coefficient and lower dielectric losses at high frequency. Most often chosen for temperature stability characteristics.

### Polystyrene Capacitors

Usually chosen for applications requiring tight tolerance coupled with high stability. Predictable temperature coefficient used in conjunction with particular ferrite coils makes highly stable tuned circuits or oscillators.

### Polypropylene Capacitors

Offer very low dielectric losses rivaling polystyrene. Suitable for high power inverters and converters and T.V. deflection.

## INDUCTORS

There are a variety of marking systems for small inductors. The value may be marked directly, with a three digit numeric code or a colour code. The tolerance may be marked directly, with a single letter, or a colour code.

The three digit numeric code indicates the value in microhenries. The first two digits represent the first two digits of the value and the third is the multiplier, or number of zero's. For example, the code 472 would be interpreted as  $4700\mu\text{H}$ , or  $4.7\text{mH}$ . Likewise, 103 would represent  $10\text{mH}$ .

Where coloured bands are used, the system is essentially the same as that used for the resistor colour code, but with the value expressed in microhenries. An exception is that some inductors include an extra, thicker band at one end to identify milspec characteristics.

Tolerance codes are usually placed after the value code. M is used to represent  $+/- 20\%$ , K or a silver band for  $+/- 10\%$ , J or a gold band for  $+/- 5\%$ .

Resin-dipped, radial lead types are often marked with a sequence of coloured dots. The significance of these dots is shown below.



4th Dot (Tolerance)  
 1st Dot  
 2nd Dot  
 3rd Dot (Multiplier)



## MOS Handling Precautions

Modern MOS manufacturing technologies have brought new levels of circuit sophistication and convenience to the circuit designer. However the extremely fine geometries and very high impedances found in these devices results in them being considerably more fragile than earlier devices.

A CMOS IC input is electrically equivalent to a capacitor, of 1 to 5pF, in parallel with a resistor of around 1 million megohms. Such a huge input impedance is prone to the build up of high electrostatic voltages, which may damage the IC through a variety of failure mechanisms.

Although most MOS devices incorporate protection networks at their inputs, at best these are only effective against static voltages of no more than about 4kV. Even the simple act of walking across a polished floor can cause a static build up on a human body of 4kV-15kV. Consequently, the following handling precautions should be adhered to at all times when handling MOS devices and circuitry.

- Never exceed the published maximum ratings specified for any device, especially a MOS part. Special care may be needed to ensure that switch-on and power down transients are contained within specified limits.
- Tie all unused MOS inputs to low-impedance, valid logic level such as Vss or Vdd.
- Only connect and disconnect test equipment to MOS circuitry while that circuitry is powered up.
- Never remove or insert a socketed MOS IC while power is applied to it.

- When MOS inputs are connected to long, noisy lines, or to circuitry operating from a different power source, series resistors (10K to 100K) should be added to protect the MOS device. In some cases this may be impractical as the added resistance may slow input rise and fall time to an unacceptable degree.

- MOS devices and circuitry should only be stored and transported in antistatic packaging.

- Nylon and similar materials, which allow the generation and build up of static charges, should never be allowed to contact MOS devices.

- MOS devices should be placed on a grounded surface and users should ground themselves to discharge any accumulated static prior to handling the devices. The use of current-limited, grounded wrist-straps is advisable.

- Similarly, soldering irons and other tools should be discharged to ground prior to using them on MOS circuitry.

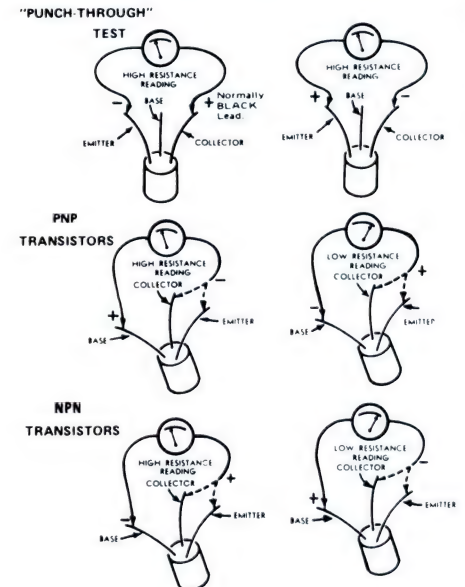
- MOS devices should be mounted on PCBs after all other components have been loaded and soldered.

- Ground and supply pins of MOS ICs should be soldered before other pins.

- Air humidifiers should be employed in otherwise dry environments. Relative humidities above 40% can significantly reduce the build up of static charges.

## Checking Transistors

The diagrams show a simple method for checking transistors using a common analog multimeter switched to a low ohms range. Note that with most analog meters, the red lead is negative and the black is positive when used on resistance ranges. Most digital multimeters can not be used in this way unless they have special ranges for testing semiconductor junctions.



## RMS, Average And Peak Relationships

The term "RMS" (root-mean-square) is often encountered in electronics publications. It is the value of any waveform which results in the same power being dissipated in a resistive load. For example, a 240V RMS a.c. waveform, no matter what its shape, will cause the same power dissipation in a resistor as 240V d.c.

The table below shows the relationship between the RMS and average values for three common waveforms for which the peak value is known. Multiplying the peak value by the factors given in the table will yield the RMS and average values.

Strictly speaking, the average value of a waveform, which is symmetrical about the zero axis, is zero. However, we often need to know the average of the absolute value of a waveform, and this is the value which the table factors will yield.

Most test equipment does not directly measure RMS values. Meters typically measure average values but are scaled to provide the RMS value of a sine wave. Knowing this, we can convert the indicated reading back to the average value and then convert this to the true RMS value as long as we know the shape of the measured waveform.

Waveshape	Multiplying Factor to Convert Peak Value to:	
	RMS	Average
Sine	0.707	0.637
Square	1	1
Triangle/ Sawtooth	0.577	0.5

## Japanese Semiconductors

Japanese Semiconductor part numbers that conform to JIS nomenclature provide useful information about the type of device.

The first character is a numeral which is one less than the effective number of electrodes. Therefore, diodes will begin with '1', transistors with '2'.

The second character is always "S" to indicate the product is a semiconductor.

The third character indicates the type of semiconductor:

- A ..... High Frequency PNP Transistor
- B ..... Low Frequency PNP Transistor
- C ..... High Frequency NPN Transistor
- D ..... Low Frequency NPN Transistor
- J ..... P Channel FET
- K ..... N Channel FET
- S ..... Small Signal Diodes

Using this information, we can work out that a 2SC1969 must be a HF NPN transistor, and 2SK134 will be an N channel FET.

## Conversions

Angstroms/nanometre	10
millimetres/inch	25.4
centimetres/foot	30.48
metres/yards	0.914
kilometres/mile	1.609
grams/ounce	28.35
kilograms/pound	0.454
litres/pint	0.567
litres/gallon	4.54
litres/cubic foot	28.32
Joules/Electron Volt	1.60210x10 <sup>-19</sup>
Watts/Horsepower	746
Coulombs/Amp Hour	3600

## Temperature Conversion

$$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32) \quad ^{\circ}\text{F} = 32 + 9/5 ^{\circ}\text{C}$$



## FUSES

The humble fuse provides reliable and low cost protection against excessive currents which occur during overloads. There are many different types and styles of fuses, and selecting the right fuse for a particular application can be difficult.

When replacing blown fuses, try to obtain a fuse with a rating as close as possible to the original. If it is not possible to locate an exact replacement, remember this — A higher current fuse will offer less protection to the equipment, increasing the risk of damage and fire. A lower current fuse will offer more protection, but will be more prone to nuisance blowing. Therefore, it is better to substitute a lower value fuse until the correct type is obtained.

The explanations below should assist in understanding the terminology of fuses:

**Current Rating** indicates the current carrying capacity of a fuse under a particular set of test conditions, at 25°C. Fuses operated at higher temperatures need to be derated, and allowance must be made for any surge that occurs during switch-on. It is generally recommended that fuses be specified at 125% of normal load current in order to avoid nuisance blowing.

**Voltage Rating** is the maximum circuit voltage at which a fuse can be relied upon to safely interrupt an overcurrent. At voltages higher than the rating, a fuse may not be able to suppress the internal arcing

## Handy Constants

Natural logarithm base e	2.71828
In (x)/log (x)	2.3026
Pi	3.14159265
Pi (for Basic Programmers)	4 x ATN (1)
0dBm	1mW
0dBm voltage in 600 ohms	774.6mV
0dBm voltage in 50 ohms	223.6mV
dB SPL reference level	20uPa
Charge on electron e	1.60210x10 <sup>-19</sup> C
Absolute zero	0K -273.°C
Speed of light in Vacuum c	2.997925x10 <sup>8</sup> mS <sup>-1</sup>
Speed of Sound c	
-in air @ 0°C	331.6mS <sup>-1</sup>
-in air @ 20°C	343mS <sup>-1</sup>
-in fresh water @ 20°C	1481ms <sup>-1</sup>
-in sea water @ 13°C	1500mS <sup>-1</sup>
Density of air @ 20°C	p0 1.293kgm <sup>-3</sup>

that occurs after the fuse link melts. In electronic circuits, where limiting impedances ensure that the fault current is kept low so that a destructive arc cannot occur, fuses may sometimes be used beyond their specified voltage rating.

**Fuse Types.** The common 3AG (Size 3 Automotive Glass) fuses are 6.3mm (0.25") in diameter and 32mm (1.25") in length. The smaller M205 fuse is 5mm in diameter and 20mm in length.

Standard fast-acting fuses are designed to open very quickly during an overload. They are not designed to withstand the inrush current or switch-on surge that occurs in some equipment.

Time delay or slow-blow fuses are designed to tolerate the temporary overloads that occur during switch on, but they will still blow quickly if subjected to gross overloads during faults. Slow blow fuses are commonly used in the primary circuits of electronic equipment, where the initial surge can be many times the normal load current. Slow blow fuses and fast acting fuses are not interchangeable due to their different time characteristics.

It should be understood that the overload needed to cause even a fast-acting fuse to open quickly must be of the order of 200% or more. An overload of only 35% (ie 4A through a 3A fuse) could take an hour to open a fuse.



# ELECTRONIC FORMULA

## CAPACITORS & INDUCTORS REACTANCE & RESONANCE

Like resistors, capacitors and inductors can be used to impede the flow of current in a circuit. However, unlike resistors, the impedance of these components varies with frequency. The impedance of an inductor increases with increasing frequency whereas the impedance of a capacitor increases with decreasing frequency. While the impedance of a resistor is termed resistance, the impedance of capacitors and inductors is termed reactance.

The reactance of a capacitor can be calculated from the formula:

$$X_c = \frac{1}{2\pi \cdot f \cdot C}$$

For an inductor the formula becomes:  $X_L = 2\pi \cdot f \cdot L$

where  $X_c$  is the capacitive reactance in ohms,  $X_L$  the inductive reactance in ohms,  $C$  is the capacitance in farads,  $L$  is the inductance in henries and  $f$  is the applied frequency in Hz.

Because reactive impedances are imaginary & resistive impedances are real, they cannot be added numerically. The total impedance of a resistor in series with a reactive component is given by:

$$Z = \sqrt{X^2 + R^2}$$

where  $Z$  is the complex impedance in ohms,  $X$  is the capacitive or inductive reactance and  $R$  is the resistance of the resistor in ohms.

When an inductor and a capacitor are placed in parallel, at a particular frequency, termed the resonant frequency, the magnitude of their reactances will be equal and the parallel network will have a very high impedance which decreases either side of the resonant frequency. If the components are placed in series, the network will have a very low impedance which increases at either side of the resonant frequency. The resonant frequency of an LC network is given by:

$$f = \frac{1}{2\pi \sqrt{LC}}$$

A full treatment of reactive components requires a good understanding of complex algebra. Interested readers should refer to any of the better electronics and RF textbooks.

## Decibels

Contrary to much popular usage amongst pseudo-technical persons, the decibel (abbreviated dB) is not actually a unit of any particular quantity, but rather an expression of the ratio between two quantities, such as power, voltage, current and acoustic pressure.

Many sensors, including our own ears, respond to stimuli in a logarithmic fashion, allowing them to detect a huge range of intensities. As the dB compares the logarithms of quantities, it agrees with our perceptive comparisons.

To calculate the ratio, in dB, of two power levels,  $P_1$  and  $P_2$ , the formula is:

$$dB = 10 \log (P_1/P_2)$$

If the quantities are voltages, currents or sound pressure levels,  $X_1$  and  $X_2$ , the formula becomes:

$$dB = 20 \log (X_1/X_2)$$

If the quantities,  $X_1$  and  $X_2$ , are both measured in the same impedances, their dB ratio will be numerically equal to the dB ratio of their equivalent powers. If their impedances,  $Z_1$  and  $Z_2$ , are unequal, the dB ratio of their powers can be found from:

$$dB = 20 \log (X_1/X_2) + 10 \log (Z_2/Z_1)$$

Negative dB values result when  $P_1$  (or  $X_1$ ) is less than  $P_2$  (or  $X_2$ ), while positive values indicate that  $P_1$  (or  $X_1$ ) is greater than  $P_2$  (or  $X_2$ ). Although the dB is not an absolute unit, certain absolute units using the dB scale have been devised. These include dBuV, dBm and dB SPL.

dBuV is a logarithmic expression of a voltage compared to 1uV (microvolt), thus, 76 dBuV is equivalent to 6.31mV (millivolts).

dBm is an expression of a power level compared to 1mW (milliwatt). -20dBm is therefore equivalent to 10uW. Furthermore, because the unit dBm is specifically a measure of power, 0dBm represents 775mV in a 600 ohm impedance but 224mV in a 50 ohm impedance.

dB SPL is a measure of sound pressure level. Although usually referred to 20.4uPa (micropascals), other reference levels may be specified. Using 20uPa as a reference, 1 Pascal equates to 93.8 dB SPL.

## INDUCTOR DESIGN

There are no simple, generalised equations for inductor design. However, equations for a few special cases will allow inductors to be designed for a wide range of applications.

1. Single layer air cored coils of length at least equal to radius. Useful in RF applications.

$$L = \frac{N^2 r^2}{254(0.9r + l)}$$

Where  $L$  = inductance in uH  
 $N$  = number of turns  
 $l$  = coil length in mm  
 $r$  = coil radius in mm

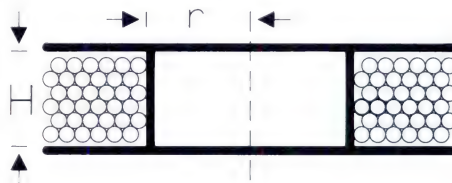
2. Multi-layer air cored coils of height equal to inner radius. Useful for loudspeaker crossovers etc.

$$H = 1.71 \sqrt{\frac{L}{R}}$$

$$N = 19.9 \sqrt{\frac{L}{H}}$$

$$d = \frac{0.841H}{\sqrt{N}}$$

Where  $L$  = inductance in uH  
 $N$  = number of turns  
 $H$  = coiled height in mm  
 $d$  = wire diameter in mm  
 $R$  = coil's d.c. resistance in ohms



3. Multi-layer air cored similar to (2) but with height equal to one half of the coil's inner radius.

$$H = 0.323 \sqrt{\frac{L}{R}}$$

$$N = 13.2 \sqrt{\frac{L}{H}}$$

$$d = \frac{0.736H}{\sqrt{N}}$$

Where the symbols have the same meaning as in (2).

4. Coils wound on high permeability core materials such as ferrites.

$$N = T \sqrt{\frac{L}{A_L}}$$

Where  $L$  = inductance of coil  
 $A_L$  = the inductance of  $T$  turns for the particular core

## CIRCUIT LAWS

### Ohm's Law

The relationship between voltage, current and resistance in a circuit is defined by Ohm's law, which may be simply stated by the formula:

$$E = I \times R \quad \text{where } E \text{ is in volts, } I \text{ is in amps and } R \text{ is in ohms.}$$

This can be turned around to look like:

$$I = \frac{E}{R} \quad R = \frac{E}{I}$$

### Power In A Circuit

When a current passes through a component, energy is given off in the form of heat. Normally, we associate resistors with this action: that's part of their job. We often need to know how much power is being given off by a resistor — and we find this out by using the formula:

$$P = E \times I \quad \text{where } P \text{ is in watts, } E \text{ is in volts and } I \text{ is in amps.}$$

This formula too can be turned around if required:

$$E = \frac{P}{I} \quad I = \frac{P}{E}$$

### Resistors In Series

Resistors in a series circuit are simply added together to find the total resistance. In other words, a 10 ohm, 150 ohm and 1000 ohm-resistor connected in series would be the equivalent of a single 1,160 ohm resistor. The formula is:

$$R_T = R_1 + R_2 + R_3 + \dots$$

### Resistors In Parallel

Resistors in a parallel circuit are a little more difficult. The formula to use is:

$$R_T = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \dots}$$

Two resistors in parallel  
 $R_T = \frac{R_1 \times R_2}{R_1 + R_2}$



### Capacitors In Series

Capacitors in series, on the other hand, are similar to resistors in parallel. You add the reciprocals:

$$C_T = \frac{1}{\frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \dots}$$

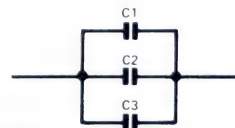
Two capacitors in series  
 $C_T = \frac{C_1 \times C_2}{C_1 + C_2}$



### Capacitors In Parallel

Capacitors behave exactly the opposite to resistors; when capacitors are in parallel, you add them;

$$C_T = C_1 + C_2 + C_3 + \dots$$



### Inductors In Series

$$L_T = L_1 + L_2 + L_3 + \dots$$

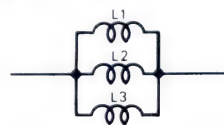


### Inductors In Parallel

$$L_T = \frac{1}{\frac{1}{L_1} + \frac{1}{L_2} + \frac{1}{L_3} + \dots}$$

Two inductors in parallel

$$L_T = \frac{L_1 \times L_2}{L_1 + L_2}$$





## Wire and Cable Coaxial Cable Specifications

Type	Nom. Imp Zo	Outer Dia. (mm)	Nom. 50 MHz	100 MHz	200 MHz	400 MHz	1GHz	Vel. Factor %	Cap. pF/m	Volt. Vrms
RG-8/U	52	10.3	5.2	7.2	10.5	15.4	29.2	66	96.8	5000
RG-9/U	51	10.67	5.2	7.2	10.5	15.4	29.2	66	98.4	5000
RG-11/U	75	10.29	4.3	6.6	9.5	13.8	23.3	66	67.3	5000
RG-58/U	53.5	4.95	10.2	14.8	22.3	32.8	55.8	66	93.5	1900
RG-58A/U	50	4.95	10.8	16.1	23.9	37.7	70.5	66	101	1900
RG-58C/U	50	4.95	10.8	16.1	23.9	37.7	70.5	66	101	1900
RG-59/U	73	6.15	7.9	11.2	16.1	23.3	39.4	66	68.9	2300
RG-59B/U	75	6.15	7.9	11.2	16.1	23	39.4	66	67.3	2300
RG-62/U	93	6.04	6.2	8.9	12.5	17.7	28.5	84	44.3	700
RG-62B/U	93	6.15	6.6	9.5	13.8	20	36.1	84	44.3	700
RG-122/U	50	4.06	14.8	23	32.8	49.9	87	66	101	1900
RG-141A/U	50	4.83	6.9	10.5	15.4	22.6	42.7	69.5	95.1	1900
RG-142B/U	50	4.95	8.9	12.8	18.4	26.9	44.3	69.5	95.2	1900
RG-174/U	50	2.56	21.7	29.2	39.4	57.4	98.4	66	101	1500
RG-178B/U	50	1.83	34.4	45.9	62.3	91.9	150.9	69.5	95.1	1000
RG-179B/U	75	2.54	27.9	32.8	41.0	52.5	78.7	69.5	64	1200
RG-180B/U	95	3.56	15.1	18.7	24.9	35.1	55.8	69.5	49.2	1500
RG-187A/U	75	2.66	27.9	32.8	41	52.5	78.7	69.5	64	1200
RG-188A/U	50	2.59	31.5	37.4	46.6	54.8	101.7	69.5	95.2	1200
RG-196A/U	50	1.93	34.4	45.9	62.3	91.9	150.9	69.5	95.2	1200
RG-213/U	50	10.29	5.2	7.2	10.5	15.4	29.2	66	101	5000
RG-214/U	50	10.8	5.2	7.2	10.5	15.4	29.2	66	101	5000
RG-223/U	50	5.38	10.1	14.8	21	30.2	53.5	66	101	1900
RG-303/U	50	4.31	6.9	10.5	15.4	22.6	42.7	69.5	95.2	1900
RG-316/U	50	2.49	30.8	34.1	43.3	54.1	101.7	69.5	95.2	1200
BEL 9913	50	10.29	3.0	4.6	5.9	8.5	14.8	84	78.7	—

N.B. Except for Belden 9913, all specifications are referenced to MIL-C-17D/F or JAN-C-17A as applicable. Actual cables often exhibit lower losses than those specified above.

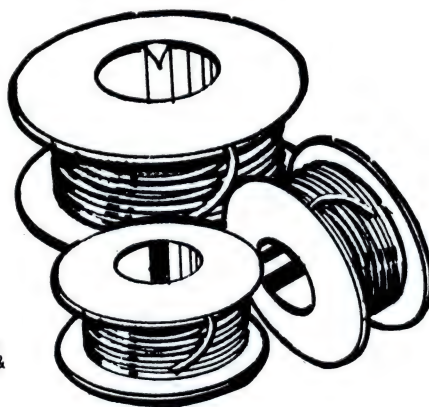
## Copper Cable Characteristics

No. of Strands	Nom. Conduct. Area (sq.mm)	Nom. Current Rating (Amps)	Max. Resist. per/mtr (ohms 35°C)	Nearest Equivalent AWG (B&S)
10 x 0.12	0.11	1.1	0.17	27
7 x 0.16	0.14	1.4	0.13	26
7x0.2	0.22	2.2	0.086	24
1x0.6	0.28	2.8	0.067	23
14x0.2	0.44	4.4	0.043	21
10x0.25	0.49	4.9	0.039	20
89x0.1	0.70	7.0	0.027	19
24x0.2	0.75	7.5	0.025	18
30x0.2	0.94	9.4	0.020	17
1x1.13	1.0	10	0.019	17
32x0.2	1.0	10	0.019	17
512x0.05	1.0	10	0.019	17
7x0.5	1.4	14	0.014	16
30x0.25	1.5	15	0.013	15
26x0.3	1.8	17	0.010	15
26x0.32	2.1	19	0.0091	14
7x0.67	2.5	22	0.0077	13
1x1.78	2.5	22	0.0076	13
252x0.127	3.2	29	0.0059	12
41x0.32	3.3	30	0.0057	12

**Note:** The nominal current ratings are intended as guide lines for low power, electronics, communications & control applications only.

## Properties of Copper

(Based upon the IEC International Annealed Copper Standard.)  
Volume Resistivity @ 20°C 0.000001724 ohm-cm  
Mass Resistivity @ 20°C 0.153 ohm-grams/sq. metre  
Temperature Coefficient @ 20°C: 0.0039  
Tensile Strength: 2536 kg/sq. cm



## Winding Wire Data

B&S Gauges	Metric mm	Diam mils	Ohms per 1000ft	Diam mm	Ohms per km.
12	—	80.81	1.588	2.053	5.210
— 14	—	80.00	1.658	2.032	5.440
— —	2.000	78.74	1.673	2.000	5.448
— 15	—	72.00	2.001	1.829	6.563
13	—	71.96	2.003	1.828	6.572
— —	1.000	70.87	2.065	1.800	6.775
— 14	—	64.08	2.525	1.628	1.284
— 16	—	64.00	2.532	1.626	8.307
— —	1.600	62.99	2.614	1.600	8.575
15	—	57.07	3.184	1.450	10.47
— 17	—	56.00	3.307	1.422	10.85
— —	1.400	55.12	3.414	1.400	11.20
16	—	50.82	4.016	1.291	13.18
— —	1.250	49.21	4.282	1.250	14.05
— 18	—	48.00	4.501	1.219	14.77
17	—	45.26	5.064	1.150	15.61
— —	1.120	44.09	5.333	1.120	17.50
18	—	40.30	6.385	1.024	20.95
— —	1.000	39.37	6.691	1.000	21.95
— 20	—	36.00	8.002	0.9144	26.25
19	—	35.89	8.051	0.9119	26.41
— —	0.9000	35.51	8.222	0.9000	27.10
— 21	—	32.00	10.13	0.8128	33.23
20	—	31.96	10.15	0.8120	33.30
— —	0.800	31.50	10.45	0.8000	34.30
21	—	28.46	12.80	0.7231	41.99
— 22	—	28.00	13.23	0.7112	43.40
— —	0.7100	27.95	13.27	0.7100	43.55
22	—	25.35	16.14	0.6440	52.95
— —	0.6300	24.80	15.85	0.6300	55.31
— 23	—	24.00	18.00	0.6096	59.07
23	—	22.57	20.36	0.5734	66.80
— —	0.5600	22.04	21.33	0.5600	70.00
— 24	—	22.00	21.43	0.5588	70.30
24	—	20.10	25.67	0.5107	84.22
— 25	—	20.00	25.93	0.5080	85.06
— —	0.5000	19.69	26.76	0.5000	87.81
— 26	—	18.00	32.01	0.4572	105.0
25	—	17.90	32.37	0.4548	106.2
— —	0.4500	17.72	33.04	0.4500	108.4
— 27	—	16.40	38.55	0.4162	126.5
26	—	15.94	40.81	0.4050	133.9
— —	0.4000	15.75	41.28	0.4000	137.2
— 28	—	14.80	47.35	0.3759	155.3
27	—	14.20	51.47	0.3608	168.9
— —	0.3550	13.97	53.10	0.3550	174.2
— 29	—	13.60	56.07	0.3454	184.0
28	—	12.64	64.90	0.3211	212.9
— —	0.3150	12.40	67.45	0.3150	221.2
— 30	—	12.40	67.45	0.3150	221.2
— 31	—	11.80	77.07	0.2946	252.9
29	—	11.26	81.83	0.2861	268.5
— —	0.2800	11.02	85.34	0.2800	280.0
— 32	—	10.80	88.91	0.2743	291.7
30	—	10.03	103.2	0.2548	338.6
— 33	—	10.00	10.37	0.2540	340.2
— —	0.2500	9.842	107.0	0.2500	351.2
— 34	—	9.200	107.0	0.2337	402.0
31	—	8.928	130.1	0.2268	426.8
— —	0.2240	8.819	133.3	0.2240	437.5
— 35	—	8.400	147.0	0.2134	482.2
32	—	7.950	164.1	0.2020	538.4
— 36	—	7.600	179.5	0.1930	589.1
— —	0.1800	7.087	206.5	0.1800	677.5
33	—	7.080	206.9	0.1799	678.8
— 37	—	6.800	224.3	0.1727	735.8

## Choose The Right Cable

The following 6 steps should help when trying to choose a suitable wire size for hooking up marine and auto accessories, extension speakers and the like.

- 1—Decide how much of the available supply voltage you are prepared to lose. All practical wires have some finite resistance, so it is impossible not to lose some voltage.
- 2—Divide the figure obtained in (1) by the maximum current which you expect to draw through the wire. This result is the tolerable resistance of your wiring.
- 3—Divide the result obtained in (2) by the total length (in metres) of the wiring loop. Include the distance from the power source to the load, & back again. This result is the maximum resistance of the desired wire in ohms per metre.
- 4—From the chart above, select a wire which has a 'Resistance per Metre' figure which is equal to or less than the desired value.
- 5—Check that the 'Nominal Current Rating' in the table is not exceeded. If it is, then you may need to select a larger wire size with an adequate rating. While the figures given are conservative, they must not be exceeded in 240V applications and may need derating in higher temperature situations.
- 6—Finally, when purchasing the wire, verify that its insulation is rated to withstand the voltage and temperature for your particular application.

### Example:

You wish to install a 12V,55W light on a boat. The current drawn by the light will be (55/12) 4.6 amps. You calculate that the length of the wiring loop is 5 metres.

**Step 1** - Let's say that you'll tolerate a loss of 5% of the available 12 volt supply, i.e. 0.6 volts.

**Step 2** - Divide 0.6 volts by 4.6 amps to obtain 0.13 ohms.

**Step 3** - Divide 0.13 ohms by 5 metres to obtain 0.026 ohms per metre.

**Step 4** - Referring to the chart, you will find that 24x0.2mm wire appears to be suitable as its resistance is 0.025 ohms per metre.

**Step 5** - The Nominal Current Rating for this cable is 7.5 amps & on this basis it is still suitable.

**Step 6** - As you are dealing with a 12V system & are able to keep the wire away from hot areas & protect it from abrasion, there is unlikely to be any problem related to the insulation.



# Bipolar Transistors

Type	Case	Pol Mat	Vce	Vcb	IC mA	Vces@ IC	Hfe@ IC	FI @ MHz	IC mA	Ptot mW	Use	Comparable Types		
AC187	TO-1	NG	15	25	1000	0.8	1A	100-500	300	1	10	1W	Audio O/P	AC127
AC188	TO-1	PG	15	25	1000	0.8	1A	100-500	300	1	10	220	Audio O/P	AC128
BC107	TO-18	NS	45	50	100	0.2	10	110-450	2	300	10	300	S.S. Amp.	BC207, BC147, BC182
BC108	TO-18	NS	20	30	100	0.2	10	110-800	2	300	10	300	S.S. Amp.	BC208, BC148, BC183
BC109	TO-18	NS	20	30	100	0.2	10	200-800	2	300	10	300	Low Noise S.S. Amp.	BC209, BC149, BC184
BC109C	TO-18	NS	20	30	100	0.2	10	420-800	2	300	10	300	Low Noise S.S. Amp.	BC209C, BC184C, BC149C
BC157	SOT-25	PS	45	50	100	0.25	10	75-260	2	150	10	300	S.S. Amp.	BC177, BC307, BC212
BC158	SOT-25	PS	25	30	100	0.25	10	75-500	2	150	10	300	S.S. Amp.	BC178, BC308, BC213
BC159	SOT-25	PS	20	25	100	0.25	10	125-500	2	150	10	300	S.S. Amp.	BC179, BC309, BC214
BC177	TO-18	PS	45	50	100	0.25	10	75-260	2	150	10	300	S.S. Amp.	BC157, BC307, BC212
BC178	TO-18	PS	25	30	100	0.25	10	75-500	2	150	10	300	S.S. Amp.	BC158, BC308, BC213
BC179	TO-18	PS	20	25	100	0.25	10	125-500	2	150	10	300	S.S. Amp.	BC159, BC309, BC214
BC182(L)	SOT-30	NS	50	60	200	0.25	10	100-480	2	150	10	300	S.S. Amp.	BC107, BC207, BC147
BC183(L)	(TO-92/74) SOT-30	NS	30	45	200	0.25	10	100-850	2	150	10	300	S.S. Amp.	BC108, BC208, BC148
BC184	(TO-92/74) SOT-30	NS	30	45	200	0.25	10	250-850	2	150	10	300	Low Noise High Gain	BC109, BC209, BC149
BC213(L)	(TO-92/74) SOT-30	PS	30	45	200	0.25	10	80-400	2	200	10	300	S.S. Amp.	BC308, BC158, BC178
BC214(L)	(TO-92/74) SOT-30	PS	30	45	200	0.25	10	80-400	2	200	10	300	S.S. Amp.	
BC327	TO-92VAR1	PS	45	50	800	0.7	500	100-600	100	100	10	800	O/P	2N3638
BC328	TO-92VAR1	PS	25	30	800	0.7	500	100-600	100	100	10	800	O/P	BC327
BC337	TO-92VAR1	NS	45	50	800	0.7	500	100-600	100	200	10	800	O/P	2N3642
BC338	TO-92VAR1	NS	25	30	1000	0.7	500	100-600	100	200	10	800	O/P	BC337
BC546	TO-92VAR1	NS	80	80	100	0.6	100	125-500	2	300	10	500	S.S. Amp.	
BC547	TO-92VAR1	NS	45	50	100	0.6	100	110-800	2	300	10	500	S.S. Amp.	BC107, BC207, BC147
BC548	TO-92VAR1	NS	30	30	100	0.6	100	110-800	2	300	10	500	S.S. Amp.	BC108, BC208, BC148
BC549	TO-92VAR1	NS	30	30	100	0.6	100	200-800	2	300	10	500	Low Noise Small Sig.	BC109, BC209, BC149
BC549C	TO-92VAR1	NS	30	30	100	0.6	100	420-800	2	300	10	500	Low Noise High Gain	BC109C, BC149C
BC556	TO-92VAR1	PS	80	80	100	0.65	100	75-500	2	150	10	500	S.S. Amp.	
BC557	TO-92VAR1	PS	45	50	100			110-330	2	150	10	500	G.P. Small Sig.	BC157, DS557
BC558	TO-92VAR1	PS	30	30	100			75	2	150	10	500	G.P. Small Sig.	BC158, DS558
BC559	TO-92VAR1	PS	30	30	100			125-600	2	150	10	500	G.P. Small Sig.	BC159
BC639	(TO-92/74) TO-92	NS	80	100	1A	0.5	500	40-160	150	1W	500	1W	Audio O/P	MU9610, TT801
BC640	TO-92/74	PS	80	100	1A	0.5	500	40-160	150	50	1W	1W	Audio O/P	MU9610, TT800
BD139	TO-126	NS	80	100	1A	0.5	500	40-160	150	250	500	8W	G.P. O/P	40409
BD140	TO-126	PS	80	100	1A	0.5	500	40-160	150	75	500	8W	G.P. O/P	40410
BD262	TO-126	PS	60	60	4A	2.5	1.5A	750	1.5A	7	1.5A	36W	High Gain Darl.O/P	BD266
BD263	TO-126	PS	60	60	4A	2.5	1.5A	750	1.5A	7	1.5A	36W	High Gain Darl.O/P	BD267
BD266A	TO-220	PS	80	80	8A	2	3A	750	3A	7		60W	High Gain Darl.O/P	
BD267A	TO-220	NS	80	100	8A	2	3A	750	3A	7		60W	High Gain Darl.O/P	
BD681	TO-126	NS	100	100	4A	2.5	1.5A	500	4A	1		40W	Darlington O/P	BD263
BD682	TO-126	NS	100	100	4A	2.5	1.5A	750	1.5A	1		40W	Darlington O/P	BD262
BF115	TO-72(28)	NS	30	50	30			25-165	1	230	1	145	V.H.F. Amp.	
BF167	TO-72(28)	NS	40	25	30			28	4	350	4	130	T.V. I.F. Amp.	
BF173	TO-72(28)	NS	25	40	25			92	7	550	5	230	T.V. I.F. Amp.	
BF180	TO-72(25)	NS	20	30	20			13	2	675	2	150	U.H.F. Amp.	BF200
BF199	TO-92VAR2	NS	25	25	25			37	7	550		500	H.F. Amp.	BF180
BF463	TO-202	PS	250	250	500			40-180	30	20		2W	H.V. Med. Pwr.	
BF469	TO-126	NS	250	250	50			50	25	60	10	1.8W	G.P. High V. Amp.	
BF470	TO-126	PS	250	250	50			50	25	60	10	1.8W	G.P. High V. Amp.	
BF990	SOT-37(2)	NS	15	20	25			25-250	14	5GHz	14	180	Wide Band Amp.	
BF991	SOT-37(2)	NS	12	15	35			25-250	30	5GHz	30	285W	Wide Band Amp.	
BFY50	TO-39	NS	35	80	1A	0.2	150	30	150	60	50	2.85W	G.P.	
BFY51	TO-39	NS	30	60	1A	0.35	150	30	150	50	50	2.85W	G.P.	
BFY90	TO-70(25)	NS	30	30	25			25-125	2	1.3GHz	25	200	U.H.F. Amp.	
BUX80	TO-3	NS	400	800	10A	1.5	5A	30	1.2A	8		100W	Deflection, High current Sw G.P. Power	
MJ802	TO-3	NS	90	100	30A	0.8	7.5A	25-100	7.5A	2	1A	200W	High Power O/P	
MJ2955	TO-3	PS	60	70	15A	1.1	4A	20-70	4A	4	500	115W	High Power O/P	
MJ4502	TO-3	PS	90	100	30A	0.8	7.5A	25-100	7.5A	2	1A	200W	High Power O/P	
MJ10012	TO-3	NS	400	600	10A	2	6A	100-2K	6A	-	-	175W	Power Darlington	
MJ15003	TO-3	NS	140	140	20A	1	5A	25-150	5A	2	500	250W	High Power O/P	
MJ15004	TO-3	PS	140	140	20A	1	5A	25-150	5A	2	500	250W	High Power O/P	
MJE340	TO-126	NS	300		500	0.75	100	30-240	50	20W		20W	G.P. High V Power	
MJE350	TO-126	PS	300		500	0.77	100	30-240	50	20W		20W	G.P. High V Power	
MJE2955T	TO-220	PS	60	70	10A	1.1	4A	20-100	4A	2	500	75W	G.P. Power	TIP2955
MJE3055T	TO-220	NS	60	70	10A	1.1	4A	20-100	4A	2	500	75W	G.P. Power	TIP3055
MRF629	79-03	NS	16	36	400			20-200	100	5W		5W	R.F. Power UHF	
MRF660	TO-220A	NS	16	36	2.4A			20-160	250	25W		25W	R.F. Power UHF	
PN100	TO-92	NS	35	60	500	0.5	100	60-240	150	350	50	600	G.P. Amp/Sw	PN2222, 2N3643
PN200	TO-92	PS	35	60	500	0.5	150	50-400	150	200	50	600	G.P. Amp/Sw	2N3638, BC214, PN3645
TIP31B	TOP-66	NS	80	80	3A	1.2	3A	20	500	3	500	40W	Power Amp-Sw	
TIP32B	TOP-66	PS	80	80	3A	1.2	3A	20	500	3	500	40W	Power Amp-Sw	
TIP142	TOP-3	NS	100	100	10A	2	5A	> 1000	5A	-	-		AF O/P	TIP140, TIP141
TIP147	TOP-3	PS	100	100	10A	2	5A	> 1000	5A	-	-		AF O/P	TIP145, TIP146
TIP2955	TOP-3	NS	70	100	15A	1.1	4A	20	4A	0.8		90W	Power Amp-Sw	MJE2955
TIP3055	TOP-3	NS	70	100	15A	1.1	4A	20	4A	0.8		90W	Power Amp-Sw	MJE3055
TT800	TO-39(Mod)	PS	60	60	1A			40-120	100	100		800	Audio Driver-Sw	TT797, NSD206, 2N4030
TT801	TO-39(Mod)	NS	60	80	1A			40-120	150	60		800	Audio Driver-Sw	TT798, NSD106, 2N3019
2N18	TO-18	NS	40	75	800	1	500	75	10	300	20	500	High S.S.	
2N3019	TO-39	NS	80	140	1A	0.5	500	50-100	500	100	50	800	H.F. Amp	
2N3053	TO-39	NS	40	60	700	1.4	150	50-250	150	100	50	2.86W	G.P. Switch	BD137
2N3054	TO-66	NS	55	90	4A	0.1	200	25	500	0.8	200	25W	Audio O/P	TIP31B
2N3055	TO-3	NS	60	90	15A	1.1	4A	20	4A	0.8	1A	115W	O/P - Sw	BDY20
2N3563	TO-106	NS	12	30	50			20-200	8	600	8	200	R.F. - I.F. Amp & Ass	BF173
2N3564	TO-106	NS	15	30	100	0.3	20	20-500	15	400	15	200	R.F. - I.F. Amp & Ass	BF167
2N3565	TO-106	NS	25	30	50	0.35	1	150-600	10	400		200	Low Level Amp	BC108, BC208
2N3566	TO-105	NS	30	40	200	1	100	50-600	10	40	30	300	G.P. Amp & Sw	BC337
2N3567	TO-105	NS	40	80	500	0.25	150	40-120	1	60	50	300	G.P. Amp & Sw	
2N3568	TO-105	NS	60	80	500	0.25	150	40-120	1	60	50	300	G.P. Amp & Sw	
2N3569	TO-105	NS	40	80	500	0.25	150	100-300	1	60	50	300	G.P. Amp & Sw	
2N3638A	TO-105	PS	25	25	500	0.25	50	100	50	150	50	300	G.P. Amp & Sw	BC328
2N3641	TO-105	NS	30	60	500	0.22	150	40-120	50	250	50	350	G.P. Amp & Sw	BC337
2N3642	TO-105	NS	45	60	500	0.22	150	40-120	50	250	50	350	G.P. Amp & Sw	BC337
2N3643	TO-105	NS	30	60	500	0.22	150	100-300	150	250	50	350	G.P. Amp & Sw	BC337
2N3644	TO-105	PS	45	45	500	1	300	115-300	50	200	20	300	G.P. Amp & Sw	BC327
2N3645	TO-105	PS	60	60	500	1	300	150-300	50	200	20	300	G.P. Amp & Sw	
2N3771	TO-3	NS	40	50	30A	2	30A	15-60	15A	0.2	1A	150W	Power Output	
2N3866	TO-39	NS	30	55	400			10-200	50	500	50	1W	V.H.F. Amp	
2N3904	TO-92	NS	40	60	200			100-300	1mA	310		310	Low Level Amp	BC167A, BF194
2N3905	TO-92	PS	40	4										



## FETS

FETS	Case	BVGSS V @ IG(uA)	VGS(OFF) Min Max @ VDS ID(nA)	IDSS(mA) Min Max @ VDS VGS	YFS(umhos) Min Max @ VDS	Ptot mW	Use/Comments
BF245B	TO-92 Var1	30 1	0.5 8 15 10	6 15 15 0	3000 6500 15	300	N/CH Junction Audio to H.F.
BF981	SOT-103	>6	2.5 10 20uA	4 25 10 0	14000 typ	225	N/CH Dual Gate MOS. VHF Amp.
BFR84	TO-72(2)	>6 100	1.5 3.8 10	20 55 10 0	15000 typ. 10	300	N/CH VHF DUAL GATE
MFE131	TO-72(2)	± 6 ±10	4 15 200uA	30 15 0	8000 20000 15	300	N/CH Dual Gate MOS. VHF Amp.
MPF102	TO-92(72)	25 10	0.5 8 15 2	2 20 15 0	2000 7500 15	310	N/CH Junction — VHF
MPF105	TO-92(72)	25 1	8 15 10	4 16 15 0	2000 6000 15	310	N/CH Junction — Audio Sw.
MPF106	TO-92(72)	25 1	0.5 4 15 10	4 10 15 0	2500 7000 15	310	N/CH Junction — RF
MPF131	262	± 6 ±10	4 15 200uA	3 30 15 0	8000 20000 15	350	N/CH Dual Gate MOS. VHF Amp
2N4342	TO-92(72)	25 10	5 10	12 30 10 0	6000 10	180	P/CH Junction — Audio Sw.
2N5245	TO92(77)	30 1	1.5 6 10	1 18 0	5800 typ. 10	360	N/CH VHF/UHF MIXER
2N5459	TO-92(72)	25 1	2 8 15 10	4 9 15 0	2000 6000 15	310	N/CH Junction — Audio Sw.
2N5484	TO92(72)	25 1	0.3 3 15 10	1 5 15 0	3000 6000 15	310	N/CH Junction VHF
2N5485	TO-92(72)	25 1	0.5 4 15 10	4 10 15 0	3500 7000 15	310	N/CH Junction — VHF
2N5486	TO92(72)	25 1	2 6 15 10	8 20 15 0	4000 8000 15	310	N/CH Junction VHF
3SK40	TO-72(2)	±6 ±10	4 15 200uA	25 15 0	8000 15	250	N/CH Dual Gate MOS. VHF Amp.
3SK121	2-6F1A	-5	-2.5 4 5 100uA	20 45 5 0	17000 typ. 10	200	N/CH UHF GaAs Dual Gate

## POWER FETS

TYPE	CASE	Ptot (W)	Vds(max) (V)	Id(max) (A)	Vgs(off) min max	Gfs umhos	Ciss (pF)	Rds (ohms)	Comment
BUK456-60A	TO-220		60	52		17M	2000	0.028	Inverters
BUK457-600B	TO-220		600	8		5M	1800	1.2	Mains SMPS
BUZ71	TO-220		50	14				0.1	Nch Power MOSFET
VN10K	TO-92	1	60	1	.3 1.5	100K	48	5	Nch DMOS FET
VN88AF	TO202F	12.5	80	2	.8 2				Nch VMOS FET
2SJ48	TO-3	100	120	7	.15 1.45	1M	900	1	Pch Power MOSFET
2SJ49	TO-3	100	140	7	.15 1.45	1M	900	1	Pch Power MOSFET
2SJ56	TO-3	125	200	8		1M	1000	1.5(max)	Pch Power
2SK133	TO-3	100	120	7	.15 1.45	1M	600	1	Nch Power MOSFET
2SK134	TO-3	100	140	7	.15 1.45	1M	600	1	Nch Power MOSFET
2SK176	TO-3	125	200	8		1M	700	1.5(max)	Nch Power

## SMALL SIGNAL DIODES

TYPE	CASE	VR	IF(mA)	Cd(pF)	VF @	IF(mA)	IR(uA) @ VR	Trr(nS)	Use/Comparable Types
Germanium									
OA47	DO-7	25	110	3.5	0.45	10	100 25	70	Gold Bonded G.P. Switching
OA90	DO-7	20	45		1.5	10	450 20		G.P. Point Contact OA70, OA80
OA91	DO-7	90	50		1.9	10	180 75		G.P. Point Contact OA71,79,81
DSOA91	DO-7	50	30	1	1	5	200 10		G.P. OA91, 1N60
1N60	DO-7	40	30	1	0.05	0.375	200 10		AM/FM Detector
OA95	DO-7	90	50		1.5	10	110 0.75		G.P. Point Contact
Silicon									
BA102	DO-7	20		20-45	Cd Ratio 1.4 @	4V/10V			Variable Capacitance
BA234/4	DO-35	20	100	<2	1	100	0.1 15		UHF Sw.
BAW62	SOD-27	75	200	2	0.75	5	5 75	4	High Speed Silicon Sw.
BB119	DO-35	15		20-25 @ 4V	Cd Ratio >1.3	@ 4V/10V			Varicap — replaces BA102
BB122	DO-35	30		12 @ 3V	Cd Ratio 5.2		0.05 28		Varicap VHF UHF
BB212	TO-92	12		500-620 @ 0.5V	Cd Ratio >22.5	@ 0.5/8V	0.05 10		AM Dual Varicap
1N914A	DO-35	75	75	4	1	10	5 75	4	Small Signal Sw. 1N4148
1N4148	DO-35	75	200	4	1	10	0.025 20	4	Small Signal Sw. 1N 914A
1N4448	DO-35	75	300	4	1	100	0.025 6	4	G.P. Silicon Sw. 1N4148
5082-2800	DO-7	70	15	2	0.41	1	0.2 50	0.1	Schottky (Hot Carrier) UHF Detector, Mixer Switch

## RECTIFIERS

TYPE	MAT	VR	IF(A)	VF @	IF(A)	IR(uA) @ VR	USE
BYX98/300	S	300	10	1.4	10	200 300	Power Rectifier Stud Mount
MR110	S	100	10				G.P. Stud Mount
MR410	S	400	10				G.P. Stud Mount
IN4002	S	100	1	1.1	1	5 100	G.P. Rectifier
IN4004	S	400	1	1.1	1	5 400	G.P. Rectifier
IN4007	S	1000	1	1.1	1	5 1000	G.P. Rectifier
BY229-400	S	400	7	1.85	20		SMPS trr = 450nS
1N4936	S	400	1	1	1	5 400	SMPS trr = 200nS
IN5404	S	400	3	1.1	3	5 400	G.P. Rectifier
IN5408	S	1000	3	1.1	3	5 1000	G.P. Rectifier
PB40	S	400	25	1.2(per leg)	12.5	10 400	Heavy Duty Bridge
3504	S	400	35	1.2(per leg)	17.5	10 400	High Current Bridge
P04	S	400	6	1.3(per leg)	6	10 400	Medium Duty Mini Bridge
W04	S	400	1.5	1.1(per leg)	1	10 400	Mini Bridge

## SCR's

TYPE	CASE	VDRM	IT(r.m.s.) (A)	IGT (mA)	VGT	PG(av) (W)	IH(mA)	dv/dt (V/uS)	COMMENTS (25°C)
BT151-500	TO-220	200	12	15max	1.5max	0.5	20max	200	(RGK=100)
BT169B	TO-92A	200	.8	.2max	.8max	0.1	5max	25	(RGK=1K)
C103B	TO-92	200	.8	.2max	.8max	0.01	5max	20	(RGK=1k)
C106Y	TO-202	30	4	.2max	.8max	0.1	5max	8	(RGK=1k)
C106D	TO-202	400	4	.2max	.8max	0.1	3max	8	(RGK=1k)
C122D	TO-220	400	8	25max	1.5max	0.5	3max	50	(Gate o/c)
C122E	TO-220	500	8	25max	1.5max	0.5	30max	50 typ	(Gate o/c)
C203B	TO-92A	200	0.8	.2max	0.8max	0.01	5max	20 typ	
C220D	TO-48	400	10	25max	1.5max	0.5	30max	50 typ	
PO103AA	TO-92A	100	0.8	.02-.2	0.8max	0.1	5max	100 typ	
PO103AB	TO-92	100	0.8	.02-.2	0.8max	0.1	5max	100 typ	
S4008	TO-220	400	8	25max	1.5max	0.5	30max	50 typ	(Gate o/c)
S6008L	TO-220	600	8	25max	1.5max	0.5	30max	50 typ	(Gate o/c)
SPS420	TO-48	400	20	25max	2.0max	0.5	50max	200	(gate o/c)
TIC126E	TO-220	500	8	20max	1.5max	0.5	40max	100 typ	(Gate o/c)
TYN608	TO-220	600	8	15max	1.5max	-	30max	200 typ	
TYN608G	TO-220	600	8	25max	1.5max	-	45max	500	



## TRIAC's

TYPE	CASE	VDRM	IT(r.m.s.) (A)	IGT (mA)	VGT (V) = 25°C	PG(αv) (W)	IH(mA)	dv/dt (V/μs)	COMMENTS (25°C)
BT139-500	TO-220	500	16	35(75-+)	1.5	.5	30	100	(Gate o/c)
BT139-600	TO-220	600	16	35(75-+)	1.5	.5	30	100	(Gate o/c)
BTA10-600B	TO-220	600	10	50(100-+)			50	100@400V	(Isolated Tab)
BT411-600B	TOP-3	600	40	50(100-+)	1.5	1.0	80	250	(Isolated Tab)
Q-40006L4	TO-220	400	6	75 max all modes	2.5	.9	60max	100typ	(Gate o/c)
SC141D	TO-220	400	6	50 "	2.5	.5	50max	100typ	(Gate o/c)
SC146D	TO-220	400	10	50 "	2.5	.5	50max	150typ	(Gate o/c)
SC151D	TO-220	400	15	50 "	2.5	.5	50max	250typ	(Gate o/c)
TIC246D	TO-220	400	16*	50 "	2.5	.5	50max		(Gate o/c)
2N64341	TO-220	400	8	75 "	2.5	.5	75max	5typ	(*case temp. below 80) (Commutating)

## ZENER DATA

Type No. ▲ 400mW Series	Type No. ▼ 1Watt Series	Nominal Zener Volt. VZ@IZT (V)	Test Current IZT (mA) 400mW 1W	Type No. ▲ 400mW Series	Type No. ▼ 1Watt Series	Nominal Zener Volt. VZ@IZT (V)	Test Current IZT (mA) 400mW 1W	Temperature coefficient range for 1 Watt units to 12 volts VZ TEMPERATURE COEFFICIENT (mV/°C) @ IZT	
1N746	1N4728	3.3	20	1N962	1N4741	11	12.5 23		
1N747	1N4729	3.6	20	1N759, 1N963	1N4742	12	11.5 21		
1N748	1N4730	3.9	20	1N964	1N4743	13	10.5 19		
1N750	1N4732	4.7	20 53	1N965	1N4744	15	9.5 17		
1N751	1N4733	5.1	20 49	1N966	1N4745	16	8.5 15.5		
1N752	1N4734	5.6	20 45	1N967, 1N4112	1N4746	18	7.8 14		
1N753	1N4735	6.2	20 41	1N968	1N4747	20	7 12.5		
1N754, 1N957	1N4736	6.8	18.5 37	1N969	1N4748	22	6.2 11.5		
1N755, 1N958	1N4737	7.5	16.5 34	1N970	1N4749	24	5.6 10.5		
1N756, 1N959	1N4738	8.2	15 31	1N971	1N4750	27	5.3 9.5		
1N757, 1N960	1N4739	9.1	14 28	1N972	1N4751	30	5.3 8.5		
1N758, 1N961	1N4740	10	14 25	1N973	1N4752	33	5.2 7.5		

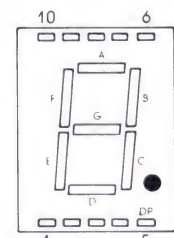
▲ DC Power Dissipation: 400 milliwatts @ 50°C Ambient  
(Derate 3.2mW/°C above 50°C)

▼ DC Power Dissipation: 1 Watt @ 50°C Ambient  
(Derate 6.67mW/°C above 50°C)

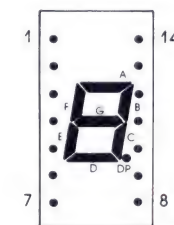
This range will dissipate up to 3W @ 75°C with 10mm lead length as heatsink.

## 7 SEGMENT LEDS

	LTS312AR Z-4117	LTS313AR Z-4103	LTS5303AR Z-4150	LTS5503AE Z-4151	LTS546AR Z-4145	LTS547AE
<b>CHARACTERISTICS:</b>						
Common Terminal Pol.	Anode	Cathode	Cathode	Cathode	Anode	Cathode
Digit Size	7.6mm	7.6mm	14.2mm	14.2mm	13.2mm	13.2mm
Colour	Red	Red	Red	Orange	Red	Orange
Av. Fwd. Seg. Current	25mA	25mA	25mA	25mA	25mA	25mA
Segment Voltage	1.7	1.7	1.7	2.1	1.7	2.1
Min. Rev. Brkdn. Volt.	5	5	5	5	5	5
Max. Rev. Current	100uA	100uA	100uA	100uA	100uA	100uA
Seg. Intensity (typ.)	450ucd	450ucd	500ucd	2200ucd	500ucd	2000ucd
Max. Seg. Dissipation	55mW	55mW	55mW	75mW	55mW	75mW
<b>CONNECTIONS:</b>						
Seg. A	1	13	7	7	7	7
Seg. B	13	12	6	6	6	6
Seg. C	10	11	4	4	4	4
Seg. D	8	6	2	2	2	2
Seg. E	7	5	1	1	1	1
Seg. F	2	3	9	9	9	9
Seg. G	11	4	10	10	10	10
Dec. Pt.	9	10	5	5	5	5
Common	3,14	2,9	3,8	3,8	3,8	3,8



Z 4150 Z 4151 Z 4145



Z 4117 Z 4103

## 4½ DIGIT LIQUID CRYSTAL DISPLAY

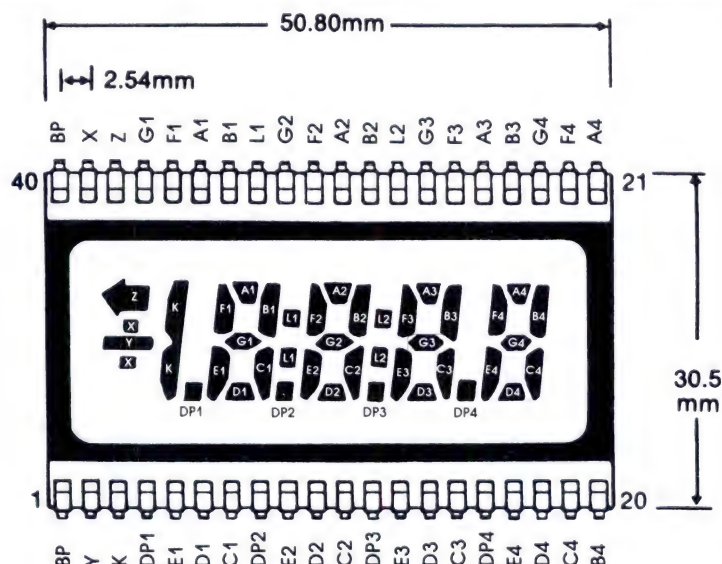
The Z-4175 is a static (direct drive) 4½ digit LCD display featuring 10mm high digits, two colons, four decimal points, plus/minus indicator and an 'arrow'. The display is fitted with DIL pins for direct insertion into a PCB or socket.

This 4½ digit display can be used as a replacement for most 3½ digit displays. The digit pinouts and sign functions are identical except for the '1' which will display in the fifth digit position instead of the fourth.

Care must be taken with LCD's to avoid damage to the glass through excessive mechanical or thermal stress. IC's such as the 7106 A/D converter are ideal for use with the Z-4175 as they provide the required drive voltages and conditions. If discrete circuitry is used to drive the display, it must ensure that the D.C. component of the drive is less than 50mV. The application of a D.C. voltage will cause damage. Normally, the 'common' or 'backplane' terminal is driven by a square wave within the specified frequency and voltage range. Those segments which are 'off' are then fed with a signal in-phase with that driving the backplane, while those segments which are intended to be 'on' are driven by a signal 180° out of phase with the backplane signal.

### Specifications

Operating Voltage:	3.0V
Maximum allowable DC:	50mV
Operating Frequency Range:	30 to 300Hz
Contrast Ratio:	20:1
DIL pin spacing	2.54mm
DIL pin length	6.35mm
Storage Temperature:	-20°C to +60°C
Operating Temperature	-10°C to +60°C





## Infrared Optics

### Z 1956 SILICON P-I-N INFRARED PHOTO DIODE

Silicon pin photo diode encapsulated in a black plastic package which acts as an infra-red filter.

Reverse Voltage	$V_{r\max}$	30V
Power Dissipation ( $\theta = 25^\circ\text{C}$ )	$P_{tot}$	150mW
Junction Temperature	$T_j$	$100^\circ\text{C}$
Dark Reverse Current ( $V_r = 10\text{V}$ $E_e = 0$ )	$I_{dr}$	30nA
Light Reverse Current ( $E_e = 1\text{mW}/\text{cm}^2$ )	$I_{lr}$	50uA
Wavelength of Peak Response	$\lambda_{pk}$	950nm



### Z 3235 GaAs INFRA RED EMITTING DIODE

High Intensity Gallium Arsenide infra-red emitting diodes intended for remote control applications. Smoke coloured end looking encapsulation.

Continuous Reverse Voltage	$V_r$	5V
Forward Current (d.c.)	$I_{f\max}$	50mA
Total Power Dissipation up to $T_{amb} = 25^\circ\text{C}$	$P_{tot\max}$	100mW
Junction Temperature	$T_j$	$100^\circ\text{C}$
Radiant Incidence ( $\theta$ $I_f = 20\text{mA}$ )	$E_o$	$1\text{mW}/\text{cm}^2$
Wavelength of Peak Emission	$\lambda_{pk}$	940nm

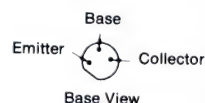


#### LIGHT DEPENDENT RESISTORS (LDR)

TYPE	$V_{pk}$	$P_{diss}$ (mW)	DARK	Resistance LIGHT	@LUX	Peak Response A
ORP12	150	200	>10M	>100	1000	6800
DSCDS01	100	50	>20M	>140K	10	6200

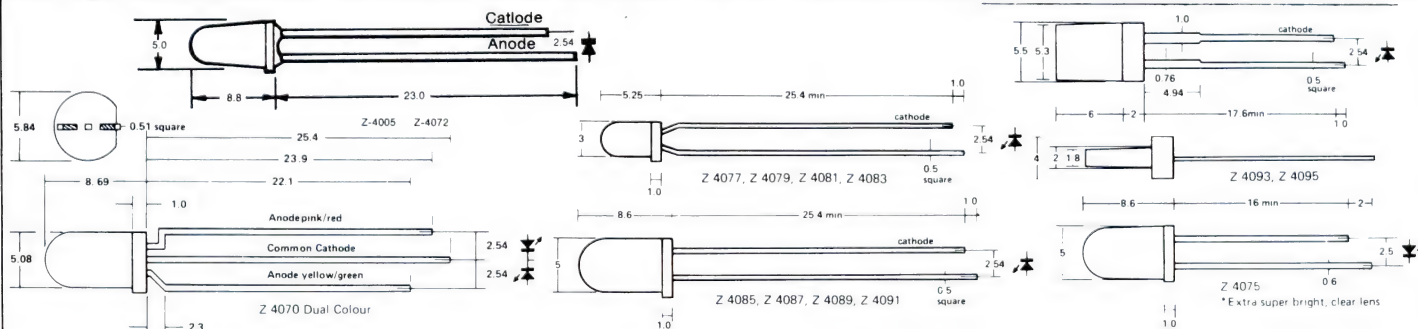
#### MEL 12 NPN Silicon Darlington Photo-Transistor

$P_D$	200mW
$I_C$	150mA
$V_{ceo}$	40V
$I_L$	3mA (typ), $H = 2\text{mW}/\text{cm}^2$ , $V_{ce} = 5\text{V}$
$I_D$	100nA (max), $V_{ce} = 5\text{V}$



## High Performance LED's

Type	Nominal Size (mm)	Lens	Fwd. Voltage (@20mA)	Max. Cont. Fwd. Current (mA)	Max. Rev. Voltage	Luminous Intensity (mcd)	@ current (mA)	Peak Wavelength (nm)
Z-4077 Red	3 dia.	Red Diffused	2.1	15	5	2	10	697
Z-4079 Green	3 dia.	Green Diffused	2.2	30	5	6	10	565
Z-4081 Yellow	3 dia.	Yellow Diffused	2.2	20	5	5	10	585
Z-4083 Orange	3 dia.	Orange Diffused	2.0	30	5	5	10	635
Z-4085 Red	5 dia.	Red Diffused	2.1	15	5	3	10	697
Z-4087 Green	5 dia.	Green Diffused	2.2	30	5	10	10	565
Z-4089 Yellow	5 dia.	Yellow Diffused	2.2	20	5	8	10	585
Z-4091 Orange	5 dia.	Orange Diffused	2.0	30	5	10	10	635
Z-4075 Red	5 dia.	Water Clear	1.8	40	4	270	20	660
Z-4072 Red	5 dia.	Water Clear	1.8	-	-	1000	20	660
Z-4005 Blue	5 dia.	White Diffused	3.0	-	-	3	20	470
Z-4070 Red/Green	5 dia.	White Diffused	2.1/2.1	-	-	1.1/5.0	20	697/565
Z-4093 Red	1.8 x 5.5	Red Diffused	2.1	15	5	0.4	10	697
Z-4095 Green	1.8 x 5.5	Green Diffused	2.2	30	5	1	10	565
Z-4097 Yellow	1.8 x 5.5	Yellow Diffused	2.2	20	5	0.8	10	585



## Flashing LED's

	Z-4040 Red	Z-4042 Green	Units
Nominal Size	5	5	mm
Operating Voltage Range	3-10	3-10	V
Intensity (typ. @ 10V)	36	10	mcd
Peak Wavelength	660	565	nm
Flash Rate (approx @ 10V)	2	2	Hz
Duty Cycle	25	25	%
Max. Rev. Voltage	0.6	0.6	V

## Using LED's

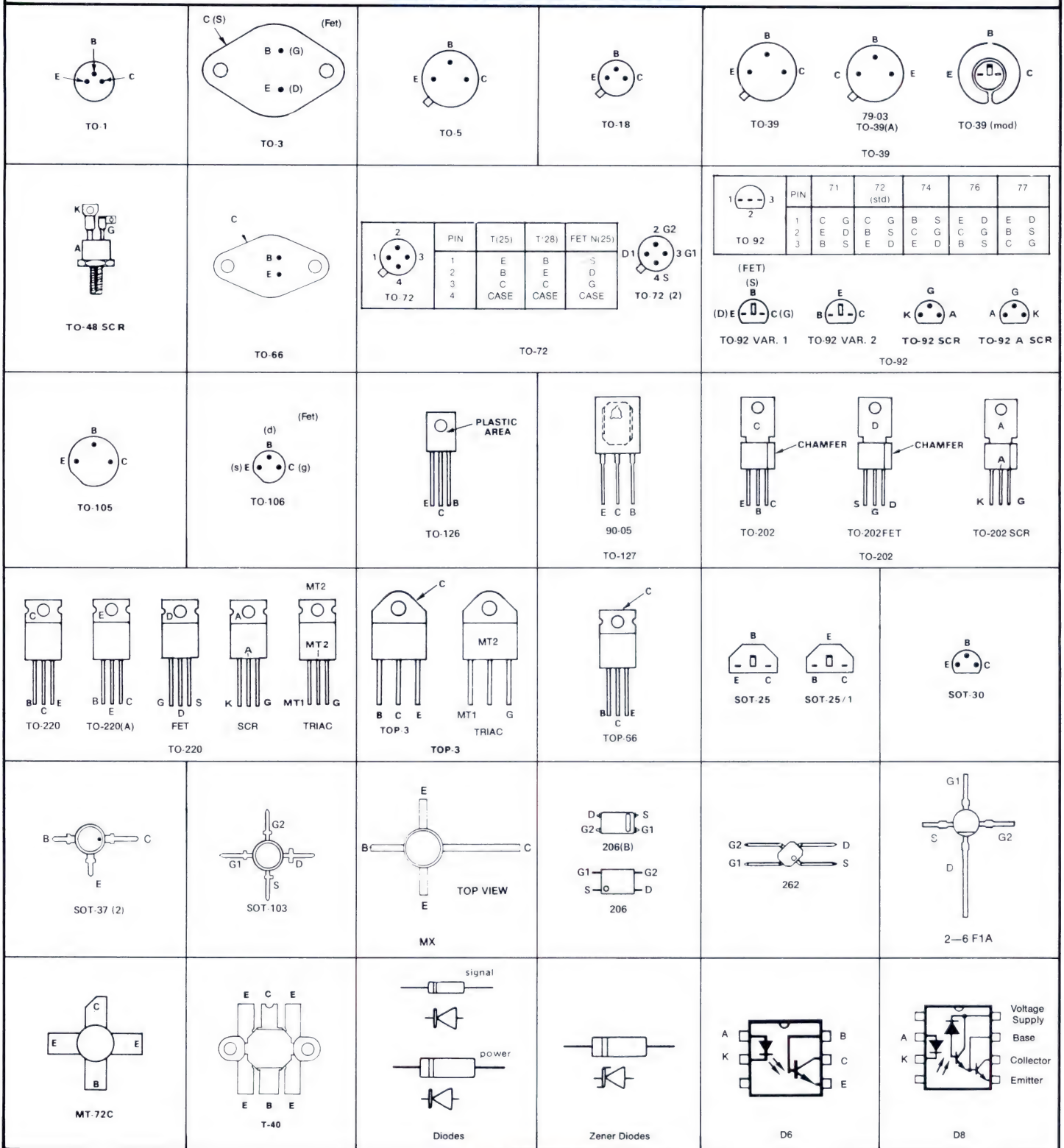
When using a Light Emitting Diode (LED) as an indicator, use the following formula to determine series resistance for various voltages:  $R = (E - 1.7) \times 1000 / I$ ; where R is the resistance in ohms, E is the supply voltage (DC) & I is the LED current in milliamps.

Eg. to operate the LED at 20mA,  
for 6V, use 220 ohms  
9V, use 390 ohms  
12V, use 560 ohms  
24V, use 1.2k ohms

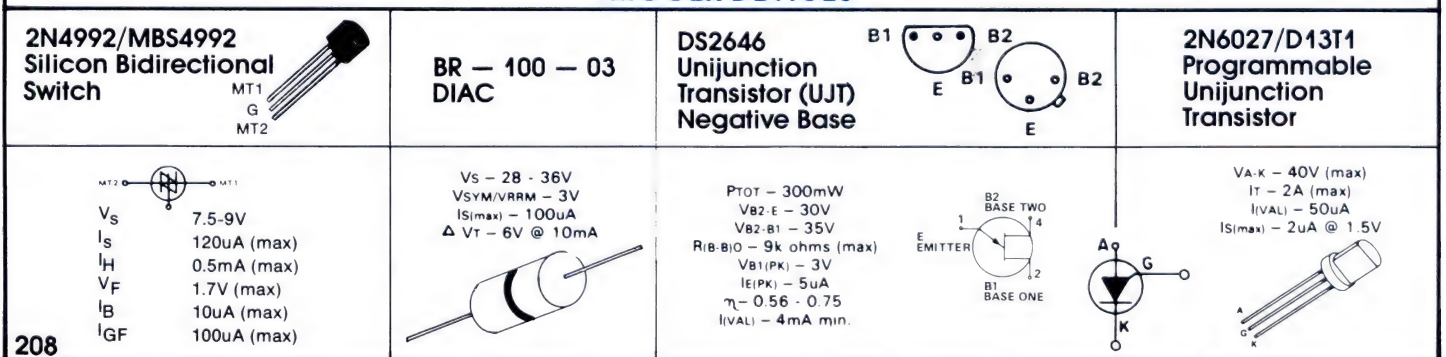




# SEMICONDUCTOR OUTLINES



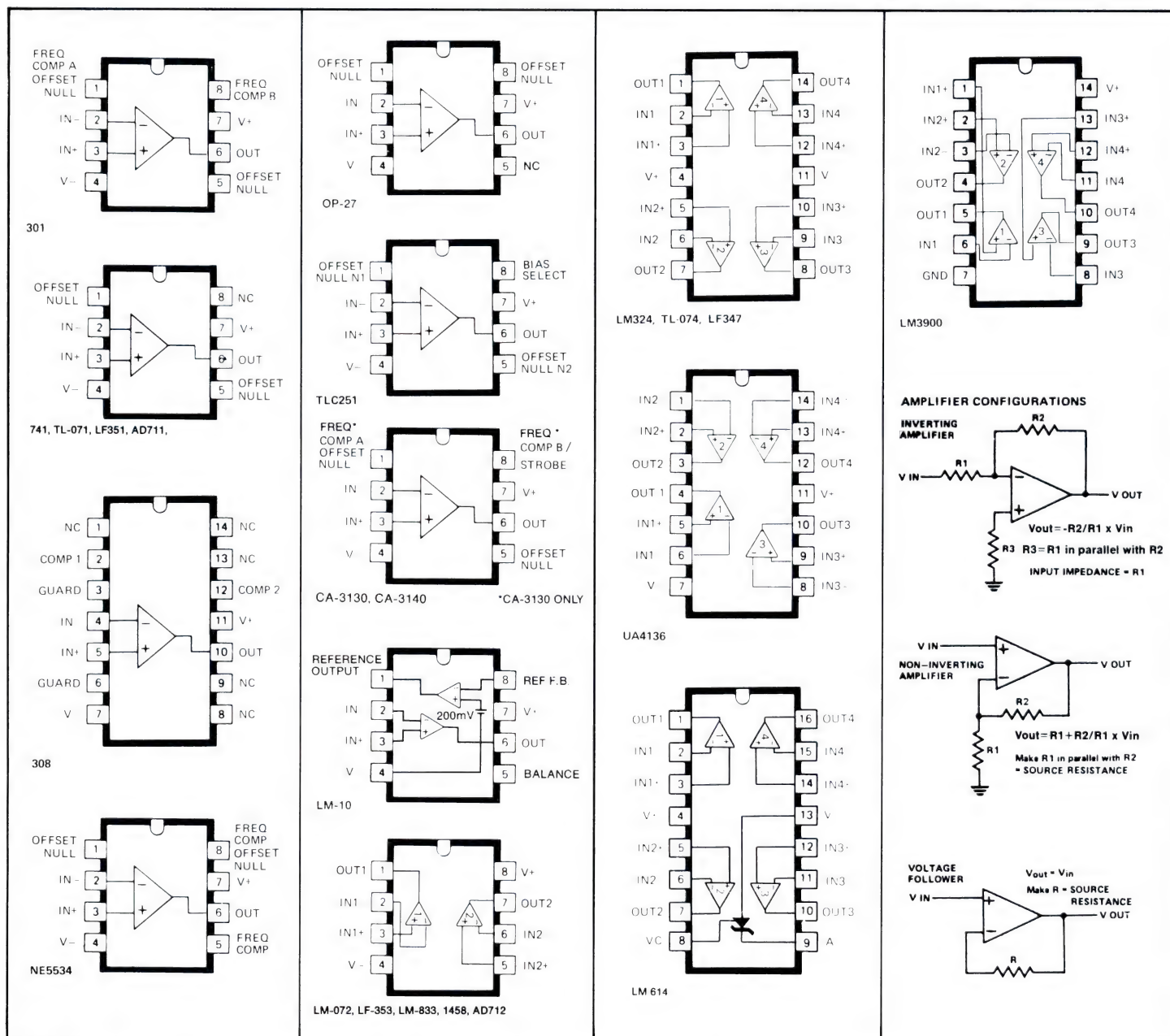
## TRIGGER DEVICES





Type	Device	Input Offset Volt. Max (mV)	Input Offset Current Max (nA)	Input Bias Current Max (nA)	Volt. Gain Min (Volts/V)	Unity Gain B.W. Type (MHz)	Slew Rate Av = 1 Typ (V/μs)	Output Volt. Swing R1 = 10k (Vs = ±15) (V)	Supply Volt. Min (V)	Supply Volt. Max (V)	CMRR Min (dB)	Differential Input Volt. (V)	Supply Current Ia = 25°C (Note 1) Max (mA)	Internal Freq. Comp.
<b>SINGLE OP AMPS</b>														
LM301	G.P. Amplifier	10	70	300	15k	1	0.5	+/- 12	+/-3	+/-18	70	+/-30	3	No
LM741	G.P. Amplifier	7.5	300	800	15k	1	0.5	+/- 12	+/-3	+/-18	70	+/-30	2.8	Yes
LM308	Low Input Current	10	1.5	10	15k	1	0.3	+/- 13	+/-2	+/-18	80	+/-1.0(Note 2)	0.8	No
NE5534	Low Noise	5	400	2000	15k	10	6	+/- 12	+/-3	+/-18	70	+/-0.5(Note 2)	8	No
OP27	Lo Noise Precision	0.22	135	150	450k	5	1.7	+/- 11	+/-4	+/-22	96	+/-0.7(Note 2)	5.7	Yes
TL071	JFET Lo Noise	13	4	7	15k	3	13	+/- 12	+/-3.6	+/-18	70	+/-30	2.5	Yes
LF351	JFET Lo Noise	13	2	8	15k	4	13	+/- 12	+/-4	+/-18	70	+/-30	3.4	Yes
TLC251	Prog Lo Power CMOS	10	0.3	0.6	7.5k	0.7	0.6	7.8(Vs = 10V)	1.4	+/-18	60	+/-30	0.22	Yes
CA3130	MOSFET Input	15	0.03	0.05	50k	4	10	+/-6(Vs = ±8)	+/-2.5	+/-8	70	+/-30	15	No
CA3140	MOSFET Input	15	0.03	0.05	20k	4.5	9	+/- 12	+/-2	+/-18	70	+/-30	6	Yes
LM10C	Inc. Voltage Ref.	5	3	40	15k	0.1	*	+/- 14.6	1.1	45	87	+/-40	0.27	Yes
LM3080	Transconductance	5	500	5000	5.4mmho	2@Ao1	50	+/- 12	+/-2	+/-18	80	+/-5	typ 1.1	No
<b>DUAL OP AMPS</b>														
LM1458	G.P. Amplifier	7.5	300	800	15k	1	0.5	+/- 12	+/-3	+/-18	70	+/-30	5.6	Yes
LM358	Low Power	9	150	500	15k	1	0.5	+/- 12	+/-1.5	+/-16	65	32	2	Yes
LM833	Hi-Fi	5	200	1000	30k	15	7	+/- 12	+/-5	+/-16	80	+/-30	8	Yes
TL072	JFET Lo Noise	13	2	7	15k	3	13	+/- 12	+/-3.6	+/-18	70	+/-30	5	Yes
LF353	JFET Lo Noise	13	4	8	15k	4	13	+/- 12	+/-6	+/-18	70	+/-30	6.5	Yes
LM13600	Transconductance	4	600	8000	5.4mmho	2@Ao1	50	+/- 12	+/-2	+/-18	80	+/-5	typ 2.6	No
<b>QUAD OP AMPS</b>														
LM324	G.P. Amplifier	9	150	500	15k	1	0.5	+/- 13	+/-1.5	+/-16	65	32	3	Yes
UA4136	G.P. Low Noise	7.5	300	800	15k	3	1	+/- 12	+/-2	+/-18	70	+/-30	11	Yes
TL074	JFET Lo Noise	13	2	7	15k	3	13	+/- 12	+/-3.6	+/-18	70	+/-30	10	Yes
LF347	JFET Lo Noise	13	4	8	15k	4	13	+/- 12	+/-4.5	+/-18	70	+/-30	11	Yes
LM614	Inc. Volt Ref.	7	50	250	25k	>1	0.8	12.4	+3	+36	80	36	typ 0.8	Yes
LM3900	Norton Amp	*	*	200	1.2k	2.5	20	10	+4	+32	*	*	10	Yes

\* Not Specified Note 1: Supply current for all channels in the package Note 2: Inputs have shunt diode protection, current must be limited.





# Voltage Regulators

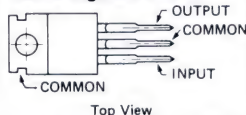
## Three Terminal Voltage Regulators

These voltage regulators almost make power supply building unnecessary since they require only a filtered DC voltage input. They are essentially indestructible (if used within manufacturer's specs.) because of internal current limiting and thermal shutdown should a short occur. They are ideally suited to local, on board regulation simplifying power supply distribution systems. Excellent for TTL and project supplies. With the advent of microprocessors and microcomputers, these regulators have been used extensively in power supplies for such systems. This type of use typifies their versatility and reliability. Another area of supply regulation use is with analogue operational amplifiers. These circuits usually call for both + and - complementary rail voltages. These three terminal devices ideally suit such requirements.

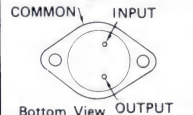
The addition of protection diodes, as shown in the 317/350 application circuit, is recommended if there is any possibility of the regulator input or output being shorted to ground. These may also be necessary if significant (>1uF) capacitance is connected between ground and either the common or output terminals of the regulator.

Type	Poi	Case	Pd 25°C (W)	Vin Max	min	Vout typ.	max	Iout (nom)	Drop-out Volt.
78L05Z	pos.	TO-92	0.7	30	4.8	5	5.2	0.1	2.2
78L12Z	pos.	TO-92	0.7	30	11.5	12	12.5	0.1	2.2
78L15Z	pos.	TO-92	0.7	35	14.4	15	15.6	0.1	2.2
7805T	pos.	TO-220	15	35	4.8	5	5.2	1	2.5
7808T	pos.	TO-220	15	35	7.7	8	8.3	1	2.5
7812T	pos.	TO-220	15	35	11.5	12	12.5	1	2.5
7815T	pos.	TO-220	15	35	14.4	15	15.6	1	2.5
7805K	pos.	TO-3	15	35	4.8	5	5.2	1	2.5
7812K	pos.	TO-3	15	35	11.5	12	12.5	1	2.5
7815K	pos.	TO-3	15	35	14.4	15	15.6	1	2.5
7905T	neg.	TO-220	15	35	-4.8	-5	-5.2	1	2.3
7912T	neg.	TO-220	15	35	-11.5	-12	-12.5	1	2.3
7915T	neg.	TO-220	15	35	-14.4	-15	-15.6	1	2.3
7905K	neg.	TO-3	15	35	-4.8	-5	-5.2	1	2.3
LM317T	pos.	TO-220	15	40	adj.	1.2 to 37	1.5	3	
LM317K	pos.	TO-3	20	40	adj.	1.2 to 37	1.5	3	
LM350T	pos.	TO-220	25	35	adj.	1.2 to 33	3	3	
LM350K	pos.	TO-3	30	35	adj.	1.2 to 33	3	3	
LM337T	neg.	TO-220	15	40	adj.	-1.2 to -37	1.5	3	

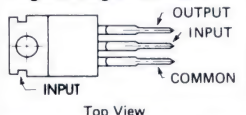
### TO-220 Package 78XX Positive Regulator Series



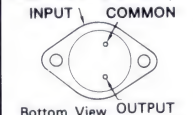
### TO-3 Package 78XX Positive Regulator Series



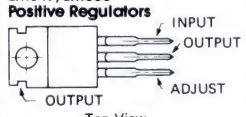
### TO-220 Package 79XX Negative Regulator Series



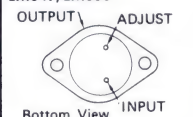
### TO-3 Package 7905 Negative Regulator



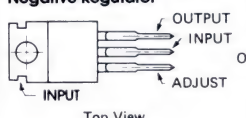
### TO-220 Package LM317/LM350 Positive Regulators



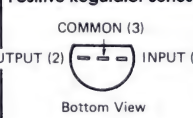
### TO-3 Package LM317/LM350 Positive Regulators



### TO-220 Package LM337 Negative Regulator



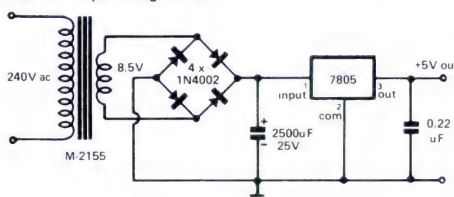
### TO-92 Package 78LXX Positive Regulator Series



## Typical Power Supply

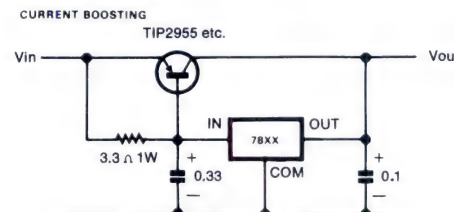
Output: 5V @1A

The same basic circuit can be used with other regulators of different voltages, only the input ac voltage has to be changed to accommodate the requirement of that regulator. eg. If an output of 12V was the requirement, a 7812 IC could be used with an ac input voltage of 15V.



## Increasing the Output Current of the Regulator

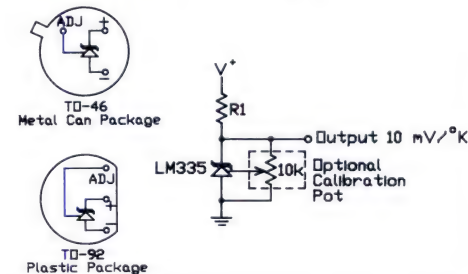
By adding a PNP power transistor to a positive regulator, the output current can be increased above the normal rating of the regulator itself. The circuit shown below can be expected to deliver in excess of 4A with the pass transistor mounted on a heatsink. The same conditions can also be implemented with a negative regulator, the difference being the polarities of components, the pass transistor in this case would be an NPN type such as a 2N3055.



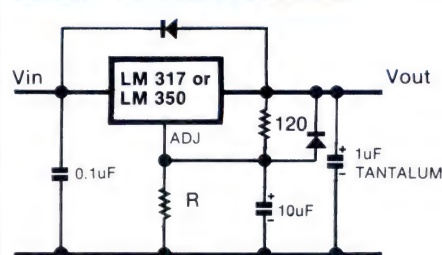
## LM335 Precision Temperature Sensor

The LM335 operates as a two terminal zener having a breakdown voltage directly proportional to absolute temperature (10mV per degree Kelvin). An adjustment terminal is provided, and maximum accuracy is realised when this is used to set the output voltage to 2.982V @ 25°C.

Max. Rev. Current	15mA
Continuous operating temp.	-40°C to 100°C
Operating output Voltage (Tc = 25°C, I = 1mA) typ	2.98V
Max. Uncalibrated Temp. error (Tc = 25°C, I = 1mA)	6°C
Output Voltage Tempco.	10mV/°C
Dynamic Impedance	0.6 Ohms
Non-Linearity (I = 1mA)	1.5°C



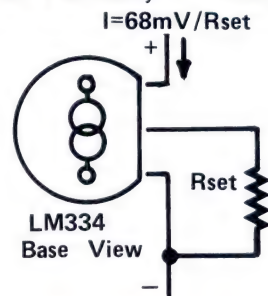
## LM317 or LM350 Series



1. Choose Resistor R as follows:  
 $R = (96 \times V_{out}) - 120$   
Where R is in ohms and Vout is in volts
2. Vin should be at least 2.5 volts greater than Vout.
3. Capacitor voltage ratings must be chosen appropriately.
4. The protection diodes shown will be necessary if the input or output of the regulator is shorted to ground. 1 amp types should be adequate.

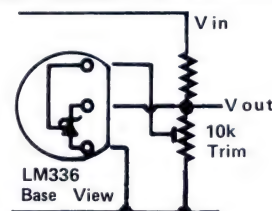
## LM334 ADJUSTABLE CURRENT SOURCE

Operating Voltage	1-30
Max Power Dissipation	200mW
Voltage Sensitivity	0.1%/V
Temperature Sensitivity	+0.33%/°C



## LM336 REFERENCE DIODES

	LM336-2.5	LM336-5.0
Max Fwd Current (mA)	10	10
Untrimmed Ref Voltage	2.44-2.54	4.9-5.1
Dynamic Impedance (ohms)	1	2
Temp Stability (0-70°C)	20ppm	20ppm



## 723 Voltage Regulator

The 723 voltage regulator is a versatile device which is intended for use with positive or negative supplies, as either a series, shunt or switching regulator. It includes a temperature compensated voltage reference, error amplifier, series pass transistor and current limit circuitry.

Output voltage is adjustable between 2 and 37 volts, and the internal transistor can supply up to 150mA. Output current capability can be increased to several amps with an external pass transistor.

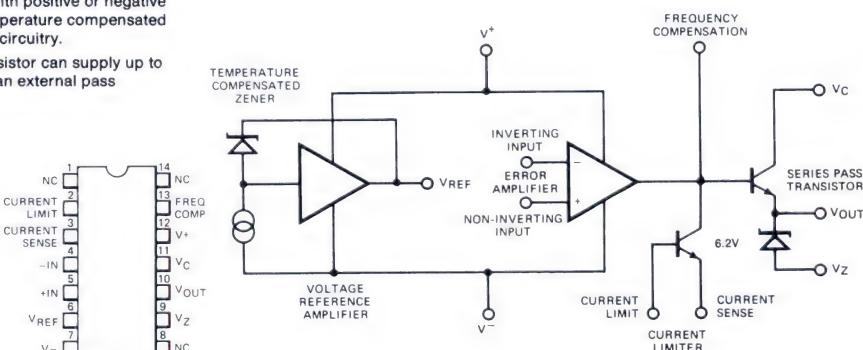
### Specifications

#### ABSOLUTE MAXIMUM RATINGS

Input Voltage	40V
Diff. Input Voltage (error amp)	+/- 5V
Com. Mode Input Voltage (error amp)	8V
Current from ref	15mA
Current from Vz	25mA
Maximum Output Current	150mA
Maximum Dissipation 25°C	660mW

#### CHARACTERISTICS

Input Voltage Range	9.5	—	40	V
Output Voltage Range	2	—	37	V
Reference Voltage	6.8	7.15	7.5	V
Standby Current Drain	—	2.3	4	mA
Thermal Resistance J-A	—	150	190	K/W





## 555 TIMER (LM/NE555 Bipolar, TLC555 CMOS)

### General

The 555 Timer is a highly versatile low-cost IC specifically designed for precision timing applications. It can also be used in monostable multi-vibrator, astable multivibrator, and Schmitt trigger applications.

### Bipolar 555

The 555 has many attractive features. It can operate from 4.5V to 16V. Its output can source (supply) or sink (absorb) load current up to a maximum of 200 mA and so can directly drive loads such as relays, LED's, low-power lamps, and high impedance speakers. When used in the 'timing' mode, the IC can readily produce accurately timing periods variable from a few microseconds to several hundred seconds via a single R-C network. Timing periods are virtually independent of supply rail voltage, have a temperature coefficient of only .005% per °C, can be started via a TRIGGER command signal, and can be aborted by a RESET command signal.

When used in the monostable mode, the IC produces output pulses with typical rise and fall times of a mere nS.

When used in the astable mode both the frequency and the duty cycle of the waveform can be accurately controlled with two external resistors and one capacitor.

### CMOS 555

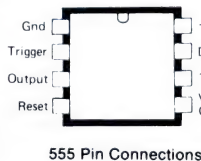
Due to its high impedance inputs (typically  $10^{12} \Omega$ ), it is capable of producing accurate time delays and oscillations while using less expensive, smaller timing capacitors than NE555. Like the NE555, the TLC555 achieves both monostable (using one resistor and one capacitor) and astable (using two resistors and one capacitor) operation. In addition, 50% duty cycle astable operation is possible using only a single resistor and one capacitor. The TLC555 will operate at frequencies up to 2 MHz and is fully compatible with CMOS, TTL, and MOS logic. While the complementary CMOS output is capable of sinking over 100mA and sourcing over 10mA, the TLC555 exhibits greatly reduced supply current spikes during output transitions. This minimises the need for the large decoupling capacitors required by the NE555.

### Specifications

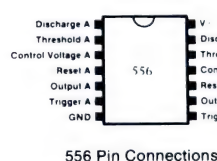
Vcc = 15V unless otherwise stated				LM/NE555C Limits		TLC555C Limits		
Parameters	Conditions	Min	Typ	Max	Conditions	Min	Typ	Max
Supply Voltage		4.5		16V		2		18
Supply Current	( $R_L = \infty$ , Vop = low)			15mA	( $R_L = \infty$ , Vop = low)			360uA
Power Dissipation				600mW				600mW
Threshold Voltage	(% of Vcc)			67%	(% of Vcc)			67%
Threshold Current			0.1	0.25uA	(Vcc = 5V)			10pA
Trigger Voltage	(% of Vcc)			33%	(% of Vcc)			33%
Trigger Current				0.5uA	(Vcc = 5V)			10pA
Reset Voltage		0.4	0.5	1V				0.7V
Reset Current			0.1	0.4 uA	(Vcc = 5V)			10pA
High Level Output	(Iol = 100mA)	12.75	13.3V		(Iol = 10mA)			12.7V
Low Level Output	(Iol = 100mA)		2	2.5V	(Iol = 100mA)			1
Output Current	Sink Source			200mA 200mA				100mA 10mA
Initial Error of Timing Interval			1%					1%

### FUNCTION TABLE

RESET	TRIGGER VOLTAGE	THRESHOLD VOLTAGE	OUTPUT	DISCHARGE SWITCH
Low	Irrelevant	Irrelevant	Low	On
High	< 1/3 Vcc	Irrelevant	High	Off
High	> 1/3 Vcc	> 2/3 Vcc	Low	On
High	> 1/3 Vcc	< 2/3 Vcc	As previously established	



555 Pin Connections



555 Pin Connections

## Monostable Operation

In the monostable mode, the timer functions as a one-shot. Referring to circuit the external capacitor is initially held discharged by a transistor inside the timer.

When a negative trigger pulse is applied to lead 2, the flip-flop is set, releasing the short circuit across the external capacitor and drives the output HIGH. The voltage across the capacitor, increases exponentially with the time constant  $t = R_1 C_1$ . When the voltage across the capacitor equals  $2/3 V_{CC}$ , the comparator resets the flip-flop which then discharges the capacitor rapidly and drives the output to its LOW state.

The circuit triggers on a negative-going input signal when the level reaches  $1/3 V_{CC}$ . Once triggered, the circuit remains in this state until the set time has elapsed, even if it is triggered again during this interval. The duration of the output HIGH state is given by  $t = 1.1 R_1 C_1$ . The timing interval is independent of supply.

When Reset is not used it should be tied high to avoid any possibility of false triggering.

## Astable Operation

When the circuit is connected as shown it triggers itself and free runs as a multivibrator. The external capacitor charges through  $R_1$  and  $R_2$  and discharges through  $R_2$  only. Thus the duty cycle may be precisely set by the ratio of these two resistors.

In the astable mode of operation,  $C_1$  charges and discharges between  $1/3 V_{CC}$  and  $2/3 V_{CC}$ . As in the triggered mode, the charge and discharge times and therefore frequency are independent of the supply voltage.

The charge time (output HIGH) is given by:

$$t_1 = 0.693 (R_1 + R_2) C_1$$

and the discharge time (output LOW) by:

$$t_2 = 0.693 (R_2) C_1$$

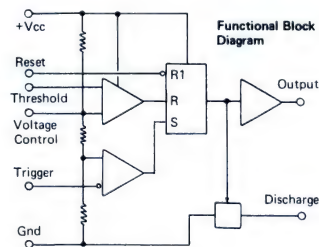
Thus the total period T is given by:

$$T = t_1 + t_2 = 0.693 (R_1 + 2R_2) C_1$$

The frequency of oscillation is then:

$$f = \frac{1}{T} = \frac{1.44}{(R_1 + 2R_2) C_1}$$

The duty cycle is given by:  $D = \frac{R_2}{R_1 + 2R_2}$



Functional Block Diagram

## Z-5425/Z-5430 CMOS Encoder/Decoder

The Z-5425 will encode & serially transmit nine digits of trinary data. The nine inputs can be either 1, 0 or Open, allowing  $3^9 = 19683$  possible codes. Transmission is initiated by a low level on the TE (Transmit Enable) input. The output is normally used to modulate an RF, ultrasonic or infrared carrier in remote control applications. Typical devices are MC145026

### Specifications:

Z-5425 Supply Voltage  
MC145026  
SC41342

4.5 — 18V  
2.5 — 18V

Z-5430 Supply Voltage  
MC145028  
SC41344

4.5 — 18V  
2.8 — 10V

Quiescent Current

Z-5425  
Z-5430

0.3uA max  
150uA max

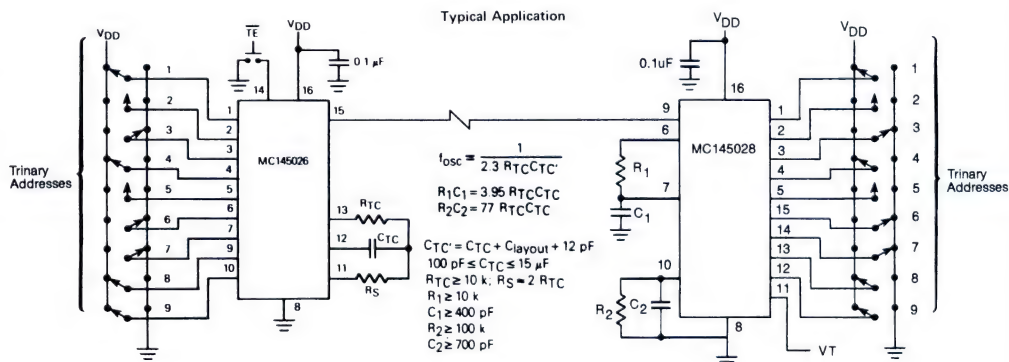
Operating Current (20kHz)

Z-5425  
Z-5430

600uA max  
1.2mA max

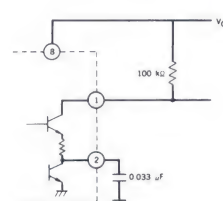
and SC41342.

The Z-5430 compares the incoming data to the address information present on its own address inputs, & sends the VT (Valid Transmission) output pin high if a match is found. Typical devices are MC145028 & SC41344.



Typical Application



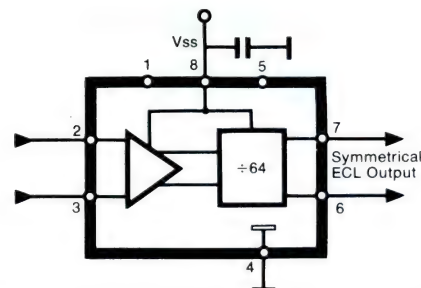




# Z-9120 1GHz Prescaler IC

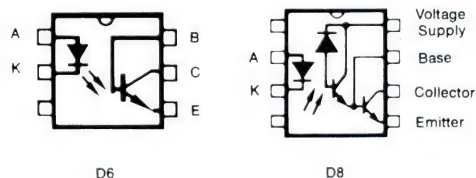
## Electrical Specifications

Supply Voltage	4.5 - 5.5 Volts
Current Consumption	23 - 60 mA
Max. Input Signal	300 mV (typ)
Input Sensitivity	< 10 mV
Frequency Range	70 - 1000 MHz
Output Voltage (pp)	1.5 Volts (typ)



## Opto Couplers

TYPE	LED				TRANSISTOR					DEVICE				CASE
	Vr (V)	If (mA)	Vf(α) (V)	If (mA)	Vce (V)	Vcb (V)	Vces(α) (V)	Ic (mA)	Hfe	Ic/If (kV)	Viso (mW)	Ptot		
4N25	3	80	1.5	10	30	70	0.5	2	325	0.5	2.5	250	D6	
4N28	3	80	1.5	10	30	—	0.5	2	325	0.2	0.5	250	D6	
SFH601	6	60	1.6	60	70	—	0.4	2.5	—	>0.4	5.3	250	D6	
6N138	5	20	1.7	1.6	7	—	0.06	6.4	—	>3	3	135	D8	

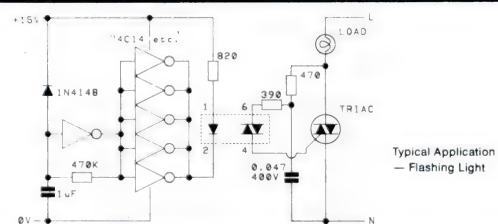


## MOC 3021 Opto Coupled TRIAC Driver

This opto-coupled triac driver consists of a gallium-arsenide infrared LED optically coupled to a silicon bilateral switch (SBS) in a 6 pin DIL pack. They are designed for general applications requiring isolated triac triggering such as interfacing TTL to mains control equipment. The device features low trigger current, high isolation and blocking voltages, and low cost.

### Specifications:

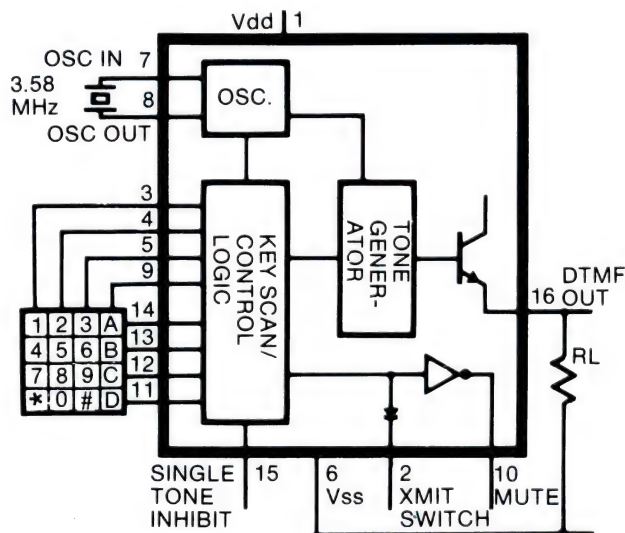
Package Dissipation	330mW	SBS Current (Pk)	100mA
Surge Isolation Voltage	7500V	SBS On Voltage (max)	3V
SBS Dissipation	300mW	LED Trigger Current (max)	15mA
SBS Blocking Voltage (Pk.)	400V	LED Fwd Voltage (max)	1.5V



## 5087 CMOS DTMF Encoder

### Specifications

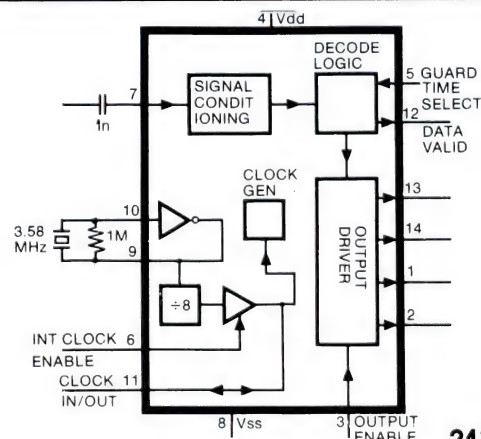
Supply Voltage	3.5 - 10V
DTMF O/P Loading	(Vdd < 5V) 620 ohms min. (Vdd > 5V) 330 ohms min.
Unloaded Supply Current	
Standby	(Vdd = 3.5V) 200 uA max.
Operating	(Vdd = 10V) 2 mA max. 10 mA max.
Xmit Sw. O/P Voltage	(Vdd = 3V Ioh = 15mA) 1.5 V min. (Vdd = 10V Ioh = 500uA) 8 V min.
Mute O/P Voltage	(Vdd = 3V) 2 V min. (Vdd = 10V) 9V min.
RMS Signal Output	High tones 390 - 630mV Low Tones 317 - 500mV
DTMD Distortion	-20 dB
DTMF Frequency Error	0.73% max.



## 145436 DTMF Decoder

### Specifications

Supply Voltage	Vdd	4.5-5.5V
Supply Current	Idd	15mA (max)
Input Impedance	Rin	90kohms (min)
Input Signal Level		20mV-800mV
Detection Bandwidth		5% (typ)
Output Current	Ioh	800uA
(Data/Data Valid Pins)	Iol	1mA
Tone on time		40mS (min)
Tone off time		40mS (min)
Detect time (Pin5=Vss)		22-40mS
(Pin5=Vdd)		32-50mS
Release Time (Pin5=Vss)		28-40mS
(Pin5=Vdd)		18-30mS





## ZN414 TRF Radio IC

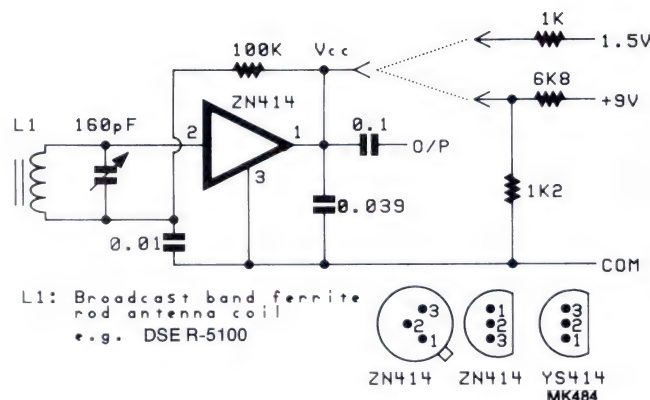
The ZN414 is a 10 transistor TRF circuit containing an RF amplifier, active detector and AGC housed in a space saving 3 pin package. The circuit features high quality audio, low current consumption, no alignment and complete stability.

A typical application is shown with two alternative power source possibilities.

### Specifications:

Supply Voltage	1.1 to 1.6V
Supply Current	0.3 to 0.5mA
Frequency Range	0.15 to 3MHz
Input Resistance	4Mohms
THD	3%
Power Gain	72dB
AF Output	30mV RMS

( $V_{in}=10mV$   $m=30\%$ )

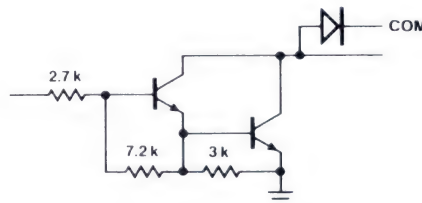


## Z-5380 Darlington Driver IC

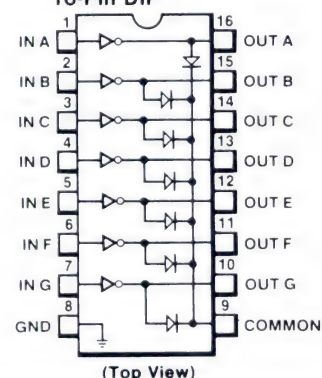
The Z-5380 comprises seven darlington transistors in a common emitter, open collector arrangement. Each darlington pair is provided with an emitter-base resistor, clamping diode and a series base resistor to allow operation directly from TTL/CMOS operating from 5 volts. Typical applications are display and solenoid drivers. Representative types are uA9667, DS2003, ULN2003.

### Specifications:

Collector Emitter Voltage (max)	50V
Collector Current (max)	350mA
$V_{ce(sat)}$ ( $I_c=350mA$ , $I_b=0.5mA$ )	1.6V
Input Voltage ( $V_{ce}=2V$ , $I_c=350mA$ )	3.0V
Clamp diode fwd. Voltage ( $I=350mA$ )	2.0V
Max Power Dissipation (25°C)	2.0W



### Connection Diagram 16-Pin DIP

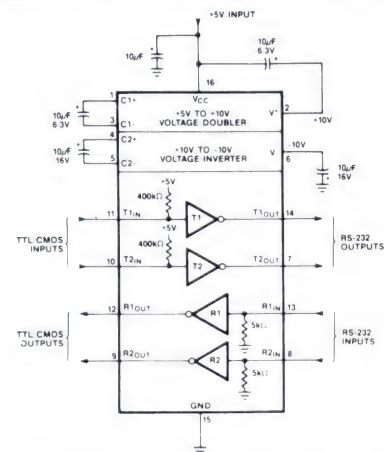


## Z-5369 CMOS Single Rail RS 232 Interface

The Z-5369 provides 2 RS 232 inputs and 2 outputs. The device features on-chip dc-dc converters to generate the bipolar RS 232 supplies from a single 5 volt rail.

### Specifications:

Supply Voltage	$V_{dd}$	4.5 to 5.5V
Supply Current	$I_{dd}$	5mA (typ)
Driver Input Voltage	$V_{il}$	0.8V (max)
	$V_{ih}$	2V (min)
Driver Input Current	$I_{il}$	-200uA (max)
Driver Output Swing	$V_{oh}$	5V (min @ $R_1=3K$ )
	$V_{ol}$	-5V (min @ $R_1=3K$ )
Driver Output Resistance	$R_o$	300 ohms (min)
Output Short Circuit Current	$I_{sc}$	10mA (typ)
Receiver Input Threshold	$V_{ih}$	1.7V (typ)
	$V_{il}$	1.2 (typ)
Receiver Input Resistance	$R_{in}$	3K to 5K
Recommended dc-dc Capacitors		1 to 47uF

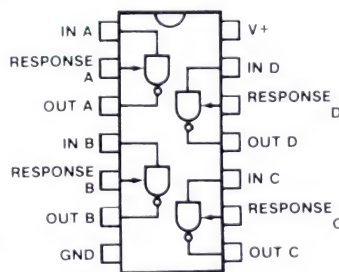


## Z-5371 RS-232 Receiver

Z-5371 is a quad RS232 line receiver/TTL translator consisting of 4 inverters. A capacitor of up to 500pF may be added between the response pins and ground to improve noise rejection. Representative types 55189, 75189, 1489.

### Specifications:

Supply Voltage	$V^+$	10V (max)
		5V (typ)
Supply Current	$I_{cc}$	26mA (max)
Input Threshold	$V_{ih}$	0.9-2.25V
	$V_{il}$	0.65-1.25V
Output Voltage	$V_{oh}$	2.6-
( $I_{oh}=-0.5mA$ )	$V_{ol}$	0.2-0.45V
( $I_{ol}=10mA$ )		
O/P Shorted Current	$I_{sc}$	-3mA (typ)

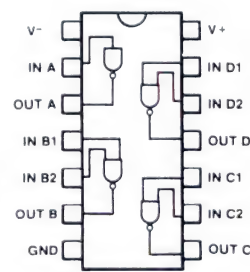


## Z-5370 RS-232 Driver

Z-5370 is a quad TTL to RS232 translator/line driver implemented as 3 NAND gates and an inverter. Representative types 55188, 75188, 1488.

### Specifications:

Supply Voltage	$V^+$	+7.5 to +15V
	$V^-$	-7.5 to -15V
Supply Current	$I_{cc}$	34mA (max)
Input Current	$V_{ih}$	1.9V (min)
	$V_{il}$	0.8V (max)
Output Voltage	$V_{oh}$	+7V
( $R_1=3K$ $V^+=9V$ )	$V_{ol}$	-7V (typ)
( $V^-=-9V$ )		
O/P Shorted Current	$I_{sc}$	9mA (typ)
Output Resistance	$R_o$	300 ohms

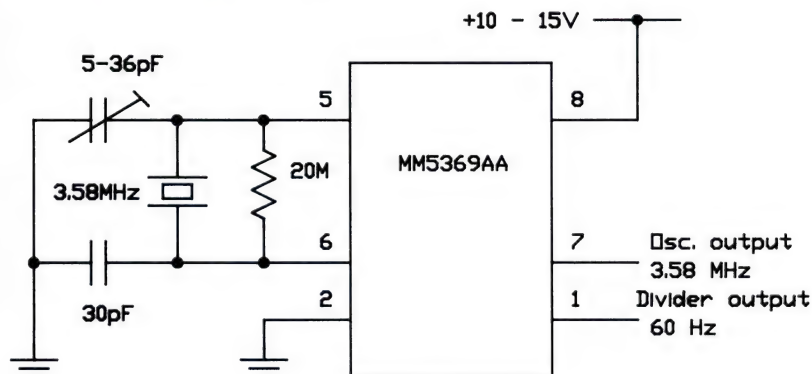




## MM5369AA Oscillator/Divider

**Supply Voltage:** +3V to +15V  
**Current Consumption:** 1 to 2.5mA

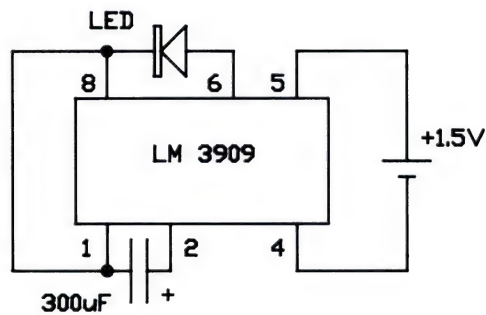
The MM5369AA from National Semiconductor uses a commonly available 3.579545 MHz crystal to generate a precise 60 Hz frequency reference. Two buffered outputs are available; the 3.58 MHz crystal oscillator frequency, and the 60 Hz divider output (45% duty cycle). Pins 3 and 4 are not connected. The minimum required supply voltage for oscillation up to 2MHz is 5V, and to 4MHz is 10V.



TYPICAL CIRCUIT

## LM 3909 LED Flasher/Oscillator

The LM3909 is designed to flash LEDs from a low voltage supply with small current drain. By using the timing capacitor for voltage boost, it delivers pulses of 2V or more to the LED while operating on a supply of 1.5V or less. The circuit shown here, powered from an AA cell, should flash a LED continuously for several months.



TYPICAL CIRCUIT

## MC3362 Low Power FM Receiver

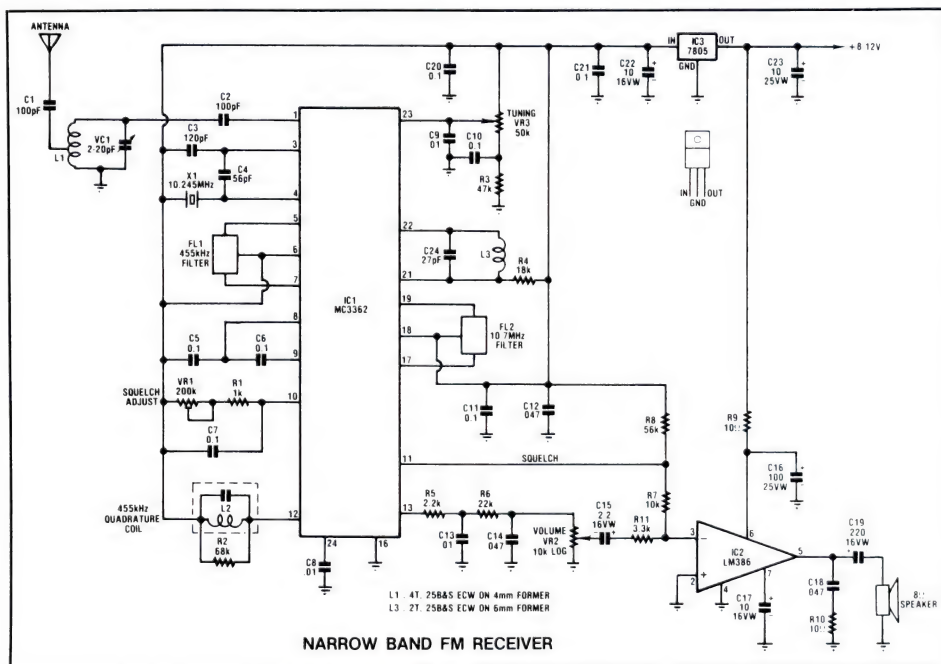
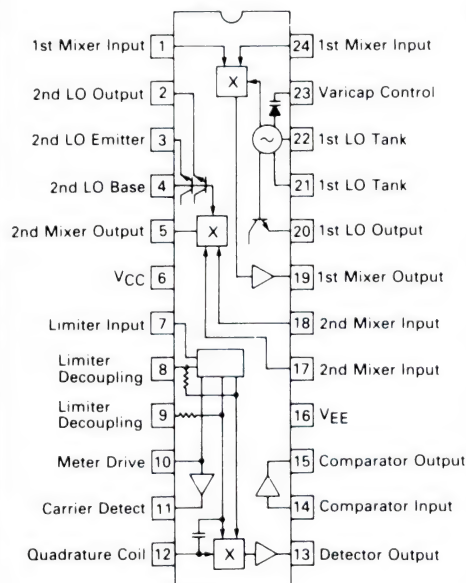
The Motorola MC3362 is a dual conversion narrowband FM receiver on a chip. Included are two local oscillators, two double balanced mixers, quadrature detector and carrier detect/meter drive circuitry.

The first L.O. will operate to beyond 150MHz, and can be configured as either a crystal oscillator for single channel use, or VCO using the internal varicap diode.


Characteristic	Pin	Min	Typ	Max	Units
Recommended Supply Voltage	6	2	-	6	V
Current Drain	6	-	4.5	7	mA
Input for -3dB limiting	-	-	0.7	2	uVrms
Recovered Audio (RF signal 10mV)	13	-	350	-	mVrms
Noise Output (RF signal 0mV)	13	-	250	-	mVrms
Carrier Detect Threshold (below Vcc)	10	-	0.64	-	Vdc
Meter Drive Slope	10	-	100	-	nA/dB
Input for 20dB (S+N) /N	-	-	0.7	-	uVrms
First Mixer Input Resistance	-	-	690	-	Ohm
First Mixer Input Capacitance	-	-	7.2	-	pF
First Mixer Input Capacitance	-	-	18	-	dB
Second Mixer Voltage Gain	-	-	21	-	dB
Detector Output Resistance	13	-	1.4	-	k ohm

### Test Conditions:

Vcc = 5V, f = 49.7MHz, Deviation = 3kHz, Ta = 25°C unless otherwise noted.



NARROW BAND FM RECEIVER

Circuit diagram courtesy of  Mar '89

See catalogue page 149 for details of K-6000 kit



## uPC1651G Wide Band Amplifier IC

The uPC1651G is a very economical low-noise, wide-bandwidth, high-gain integrated circuit amplifier covering from HF to UHF. Typical applications include mast-head and instrumentation pre-amplifiers in 50 to 75 ohm systems.

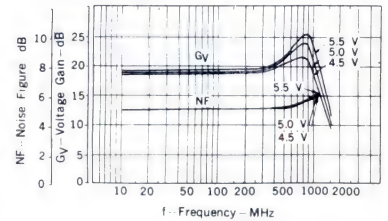
### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Circuit Current	$I_{CC}$	15	20	25	mA	$V_{CC} = 5\text{ V}$
Gain	$G_V$	16	19		dB	$V_{CC} = 5\text{ V}$ , $f = 500\text{ MHz}$
Noise Figure	NF		5.5	6.5	dB	$V_{CC} = 5\text{ V}$ , $f = 500\text{ MHz}$
Band Width	BW	1 000	1 200		MHz	$V_{CC} = 5\text{ V}$ , 3 dB down
Isolation	$I_{SO}$	20	24		dB	$V_{CC} = 5\text{ V}$ , $f = 500\text{ MHz}$
Input Return Loss	$ S_{11} $		15		dB	$V_{CC} = 5\text{ V}$ , $f = 500\text{ MHz}$
Output Return Loss	$ S_{22} $		10		dB	$V_{CC} = 5\text{ V}$ , $f = 500\text{ MHz}$
Maximum Output Level	$P_O$	3	5		dBm	$V_{CC} = 5\text{ V}$ , $f = 500\text{ MHz}$

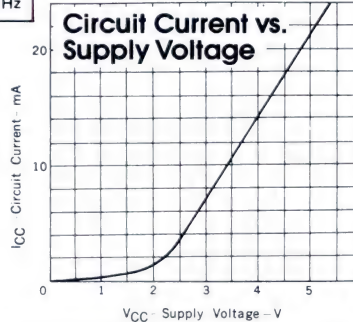
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Supply Voltage 6 V  
Total Power Dissipation 250 mW  
Operating Temperature  $-20$  to  $+75^\circ\text{C}$   
Storage Temperature  $-40$  to  $+125^\circ\text{C}$

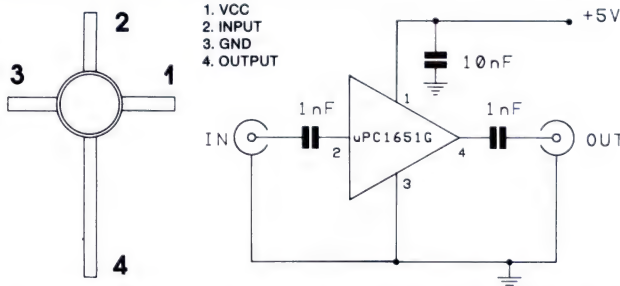
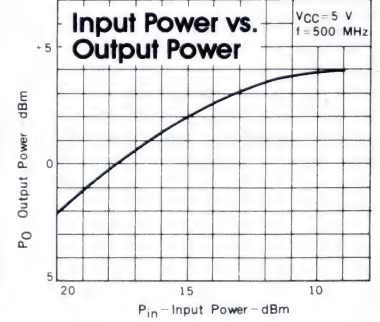
### Noise Figure and Voltage Gain vs. Frequency



### Circuit Current vs. Supply Voltage



### Input Power vs. Output Power

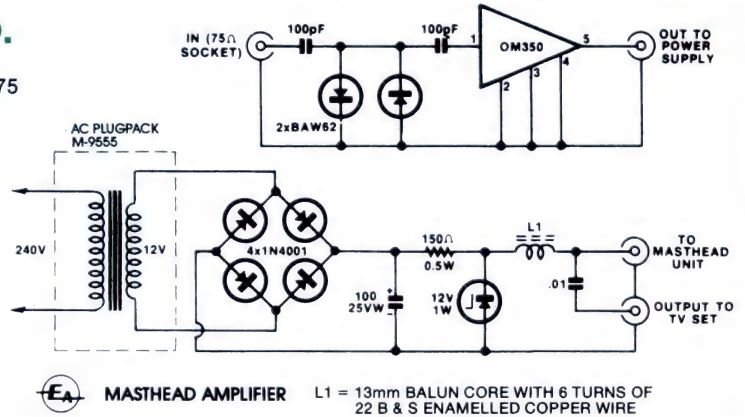
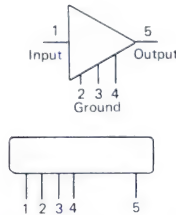


## OM350 T.V./F.M. Masthead Amp.

The Philips OM350 is a two stage wide-band amplifier implemented using thin-film hybrid techniques. The device is intended for use in 75 ohm TV antenna systems.

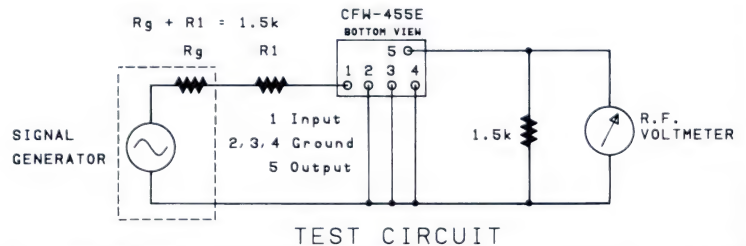
### Specifications:

Max Supply Voltage 15V  
Operating Voltage 12V  
Supply Current 18mA  
Transducer Gain 18dB  
Frequency Range 40-860MHz  
Flatness 1 dB  
Input/Output Impedance 75 ohms  
Max Input VSWR 1.5  
Max Output VSWR 1.9  
Noise Figure 7dB  
Output Voltage (-60 dB IMD) 100mV



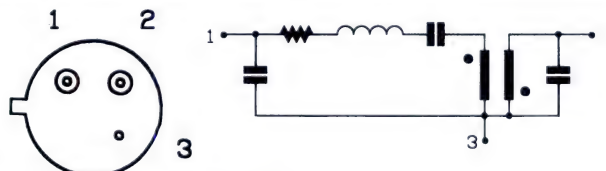
## CFW455E Ceramic Filter

Centre Frequency 455kHz  
6dB Bandwidth  $\pm 7.5\text{ kHz}$   
Attenuation B.W. (50dB)  $\pm 15\text{ kHz}$   
Stop Band Attn. ( $\pm 100\text{ kHz}$ ) 35dB  
Insertion Loss 6dB  
Input/Output Impedance 1.5k-ohm  
Size (l x w x h) 11 x 7 x 8.5mm



## Z-2771 Saw Resonator

Operating Temperature:  $-45^\circ\text{C}$  to  $+85^\circ\text{C}$   
Dissipated Power: 0dBm  
DC Voltage: 30V  
Storage Temperature:  $-45^\circ\text{C}$  to  $+85^\circ\text{C}$

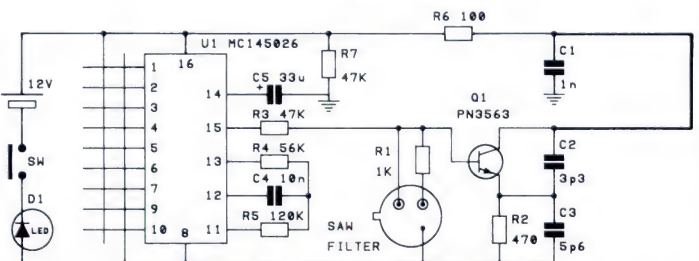


### Temperature Dependence Of $f_c$ :

$f_c = f_{c0} [1 + K_T (T - T_0)^2]$   
Loaded Q:  $Q_L = Q_U (1 - 10^{-IL/20})$   
 $f_c$ : Centre Frequency  
 $f_{c0}$ : Centre Frequency at  $T_0$   
 $K_T$ : Temperature Coefficient  
 $T_0$ : Frequency Inversion Temperature  
IL: Insertion Loss

CHARACTERISTICS	MIN	TYP	MAX	UNIT
Centre Frequency ( $f_c$ )	303.625	303.875	304.125	MHz
Insertion Loss (IL) @ $f_c$	-	11.5	13.5	dB
Loaded Q ( $Q_L$ )	7000	-	-	-
Unloaded Q ( $Q_U$ )	8500	-	-	-
Nominal Phase at $f_c$	-	180	-	degr.
Ageing	-	-	$\pm 100$	ppm
Temp. Coefficient ( $K_T$ )	-	-0.03	-	ppm/ $K^2$
Freq. Inversion Temp. ( $T_0$ )	20	35	50	$^\circ\text{C}$

TEST CONDITIONS: Ambient Temperature:  $25^\circ\text{C}$  Source & Load Impedance: 50 ohm



CIRCUIT APPLICATION  
K-3259 HIGH STABILITY UHF REMOTE CONTROL KEY SWITCH



# Poly Switch Protectors

PolySwitch protectors are PTC resistors which exhibit an abrupt increase in resistance when heated above a specific temperature by excessive current and/or ambient temperature. They can replace traditional bimetal devices and offer effective protection for motors, power supplies, batteries, loudspeakers etc.

## Ratings

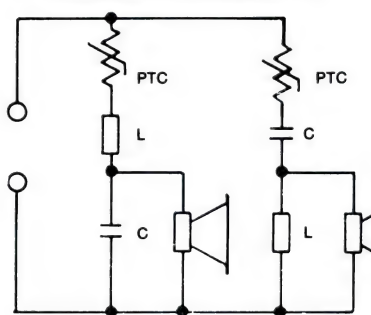
Maximum RMS voltage	50V
Max interrupt current	40A
Max interrupt cycles	500
Ambient temperature	0-70°C

## Characteristics (@ 20°C)

Tripped surface temp.	125°C
Reset time	<20S
Tripped resistance	V <sup>2</sup> /Pd

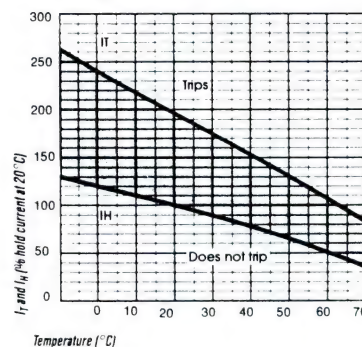
Model	Hold Current I <sub>h</sub> (amps)	Trip Current I <sub>t</sub> (amps)	Cold Resistance (ohms)	Tripped Dissipation Pd (W)
RDE050A	0.50	1.0	0.423	1.4
RDE070A	0.70	1.4	0.259	1.6
RDE090A	0.90	1.8	0.177	1.8
RDE115A	1.15	2.3	0.123	1.9
RDE135A	1.35	2.7	0.093	2.1
RDE185A	1.85	3.7	0.059	2.4
RDE245A	2.45	4.9	0.039	2.8
RDE305A	3.05	6.1	0.030	3.2
RDE390A	3.90	7.8	0.021	3.7

## TYPICAL APPLICATION



Hold current is the current which the device will pass while maintaining a low resistance condition. Both the hold current and trip current are reduced by increased ambient temperature as shown in the graph below.

Typical thermal derating



# PolySwitches as Speaker Protectors

PolySwitches are an ideal, simple and economical solution to protecting expensive loudspeakers from damage, or even fire, caused by high-power or faulty power amplifiers. However, choosing a correctly rated PolySwitch is something of black art. Factors which make a suitable choice difficult include the PolySwitch's tolerance, uncertainties in the speaker's true power rating and variations in the average power applied to a speaker with differing program material. Nevertheless, armed with a few assumptions and some simple arithmetic, a reasonable choice can be made.

Firstly, the continuous power rating for each speaker in a system needs to be determined. For woofers, this is often printed on the speaker or is provided in manufacturers' data sheets. For tweeters and mid-range drivers, manufacturers often quote a system power rating rather than a continuous power rating for the drivers themselves. Tweeters typically have continuous ratings of around 5 to 10 watts which may be between 5% and 15% of their system power rating. Midrange drivers will normally tolerate continuous powers of between 5 and 25 watts which may range between 15% and 25% of their system power rating.

Having determined, or guessed, each driver's continuous power rating, the next step is to calculate the equivalent current rating. This is done using the following formula in which I is the current rating, P is the continuous power rating and Z is the speaker's nominal impedance; normally 4 or 8 ohms.

$$I = \sqrt{\frac{P}{Z}}$$

Given the equivalent current rating for each driver, a PolySwitch having a hold current rating of 20% to 50% of the driver's rating should provide effective protection. Devices chosen towards the lower end of this range will provide the greatest protection but may be prone to nuisance tripping. If this proves to be a problem then some experimentation with higher rated devices will be necessary. If the calculated PolySwitch rating is lower than that of the smallest PolySwitch, then it is fair to assume that the use of the smallest available device will be better than no protection at all.

# R 1802 Metal Oxide Varistor

Metal Oxide Varistors are voltage dependent symmetrical resistors intended to protect equipment from transient voltages resulting from lightning strikes, load dumps etc. When subjected to a high-energy voltage transient, the device's impedance changes from a high standby value to a very low conducting value. The use of these devices not only significantly reduces the

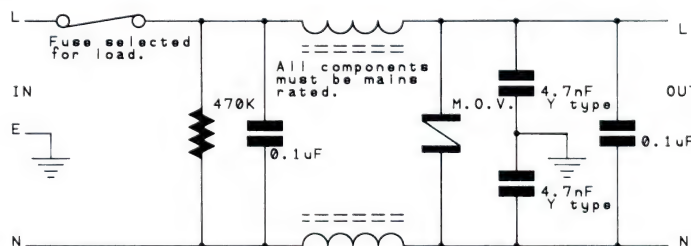
## Ratings and Characteristics

Maximum continuous voltage sine wave RMS	275V
DC	350V
Maximum Energy (10/1000uS pulse)	75J
Maximum dissipation	600mW
Peak Current (single 8/20uS pulse)	4500A
Minimum Varistor Voltage (1mA d.c test)	387V
Maximum Clamping Voltage (50A, 8/20uS)	710V
Typical Capacitance	460pF

Note: An 8/20uS pulse refers to a pulse which rises from 10% to 90% in 8uS and falls from 100% to 50% in 20uS. This pulse is considered to be representative of lightning strikes.

chance of electrical damage but also improves equipment reliability.

A circuit showing a typical application of a device in a line filter is shown. Note that because a varistor may explode if subjected to energy levels in excess of maximum ratings, protective fusing and/or shielding is recommended to guard against physical damage.



# R 1804 Gas Arrester

Gas arresters offer protection against voltage transients by switching to a low voltage arc state when their spark-over voltage is exceeded. Under normal conditions the devices are effectively open-circuit, presenting a small capacitance between electrodes.

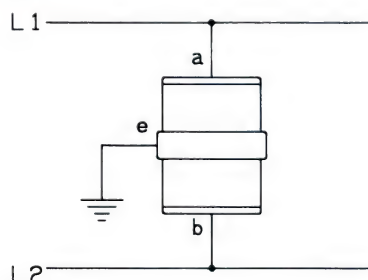
Because the devices clamp to around 10 to 20 volts while in the arcing condition, they are not suitable for connection across higher voltage, low

impedance supply lines such as 240V mains. They are suitable for use in lower voltage, current limited applications such as in telecommunications networks and antenna circuits.

Model R 1804 is a 3 electrode device for connection between 2 lines and ground. It is Austel certified for use in telecommunications equipment. (Austel CCL A90/ME/0041.)

## Ratings & Characteristics



Discharge Current (8/20uS pulse)	a+b-e	20000A
	(a-e, b-e)	10000A
(AC 50Hz)	a+b-e	20A
	(a-e, b-e)	10A
Sparkover Voltage (DC)	a-e, b-e	480-720V
(Impulse)	a-e, b-e	<1200V
Insulation Resistance (@ 100V)		>10 <sup>10</sup> ohms
Capacitance (a-e, b-e)		<2.2pF
	(a-b)	<1.2pF





# Common Connectors

## DIN CONNECTORS

Contact arrangement	Application	Connections				
		1	2	3	4	5
<b>MALE PLUG</b>  <b>FEMALE SOCKET</b> 	Microphone	Monaural system (balanced)	Hot lead	Return lead		
		Monaural system (unbalanced)	Hot lead			
	Microphone	Stereophonic system (balanced)	Hot lead of left-hand channel	Return lead of left-hand channel	Hot lead of right-hand channel	Return lead of right-hand channel
		Stereophonic system (unbalanced)	Hot lead of left-hand channel		Hot lead of right-hand channel	
	Turntable	Monaural system		Hot lead		Connected to 3
		Stereophonic system		Hot lead of left-hand channel		Hot lead of right-hand channel
	Tape recorder	Monaural system	Input signal	Output signal	Connected to 1	Connected to 3
		Stereophonic system	Input signal of left-hand channel	Output signal of left-hand channel	Input signal of right-hand channel	Output signal of right-hand channel

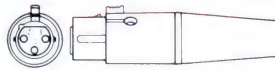
## 3 PIN XLR CONNECTORS

Widely used in professional audio applications these connectors generally offer a locking mechanism, very good cable clamping and low contact resistance. The pins are arranged so that when the connectors mate, one pin (used as the ground pin) always makes contact before the other two.

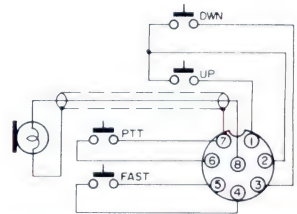
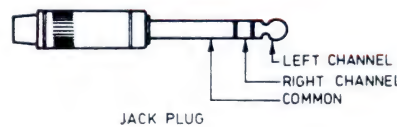
## IEC STANDARD COMMON ALTERNATIVE

1. EARTH/SHIELD
2. IN PHASE (HOT)
3. OUT OF PHASE (COLD)

1. EARTH/SHIELD
2. OUT OF PHASE
3. IN PHASE














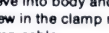

















## HEADPHONE PLUG



## YAESU 8 PIN MICROPHONE CONNECTION

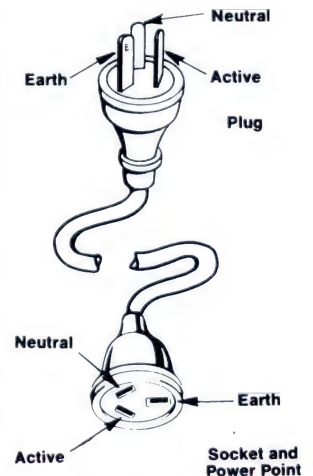
Commonly used on base and mobile transceivers

## WIRING RF PLUGS

BELLING-LEE TYPE	BNC TYPE (FEMALE)	BNC TYPE (MALE)	'N' TYPE	UHF TYPE
 <b>STEP 1:</b> Cut end of cable evenly and remove 22mm of outer sheath.  <b>STEP 2:</b> Remove 16mm of braid and dielectric, taking care not to damage centre conductor. Lightly tin conductor.  <b>STEP 3:</b> Slide cap and collet clamp over cable and slightly squeeze collet in position. Comb braid out and fan back over collet.  <b>STEP 4:</b> Solder tip of plug to centre conductor. Do not overheat. Push sub-assembly into body of plug, and screw cap onto body to complete assembly. 	 <b>STEP 1:</b> Cut end of cable evenly and remove 8mm of outer sheath.  <b>STEP 2:</b> Slide clamp nut and pressure sleeve over cable, and comb out braid.  <b>STEP 3:</b> Fold braid back and insert ferrule between braid and dielectric. Trim off excess braid.  <b>STEP 4:</b> Remove 5mm of dielectric without damaging centre conductor. Tin conductor.  <b>STEP 5:</b> Slide rear insulator over conductor hard against rear insulator. Solder contact to conductor.  <b>STEP 6:</b> Fit front insulator in body and push sub-assembly onto body. Slide pressure sleeve into body and screw in the clamp nut to clamp cable. 	 <b>STEP 1:</b> Cut end of cable evenly and remove 7mm of outer sheath.  <b>STEP 2:</b> Slide clamp-nut, washer and rubber spacer over cable. Slide pressure sleeve over braid, and fan out braid.  <b>STEP 3:</b> Fold back braid against pressure sleeve and trim off excess. Strip 4mm of inside insulation off centre wire. Solder pin onto centre wire.  <b>STEP 4:</b> Fit assembly, pin first, into main receptacle. Push washer, rubber spacer and clamp nut up and screw into place. 	 <b>STEP 1:</b> Cut end of cable evenly and remove 9mm of outer sheath.  <b>STEP 2:</b> Slide clamp nut and pressure sleeve over cable, and comb out braid.  <b>STEP 3:</b> Fold braid back and insert ferrule between braid and dielectric. Trim off excess braid and remove 5.5mm dielectric without damaging inner conductor. Tin end of conductor.  <b>STEP 4:</b> Slide rear insulator over conductor and position against end of dielectric. Slide contact over conductor until hard against rear insulator. Solder contact to conductor.  <b>STEP 5:</b> Fit front insulator in body and push sub-assembly into body. Slide pressure sleeve into body and screw in the clamp nut to clamp cable. 	 <b>STEP 1:</b> Cut end of cable evenly and remove 27mm of outer sheath.  <b>STEP 2:</b> Slide coupling ring and adapter onto sheath. Fan braid back over sheath.  <b>STEP 3:</b> Compress braid around cable and position adapter so braid fans over adapter. Trim off excess braid.  <b>STEP 4:</b> Remove 12.5mm dielectric and tin conductor. Screw the plug assembly onto cable and solder plug to braid through solder holes.  <b>STEP 5:</b> Solder conductor to centre pin and screw coupling ring onto assembly. 

## Get it right!

Note the correct locations of the active, neutral and earth pins — a power outlet is exactly the same as an extension cord socket. (In almost all cases you will find a power point or socket is labelled A, N & E. Power points may also be colour coded, but usually they are marked with the old [red/black/green] colours.)



## COLOUR CODE TABLE

	OLD	NEW
ACTIVE	RED	BROWN
NEUTRAL	BLACK	BLUE
EARTH	GREEN	GREEN/YELLOW



## PC Video Connections

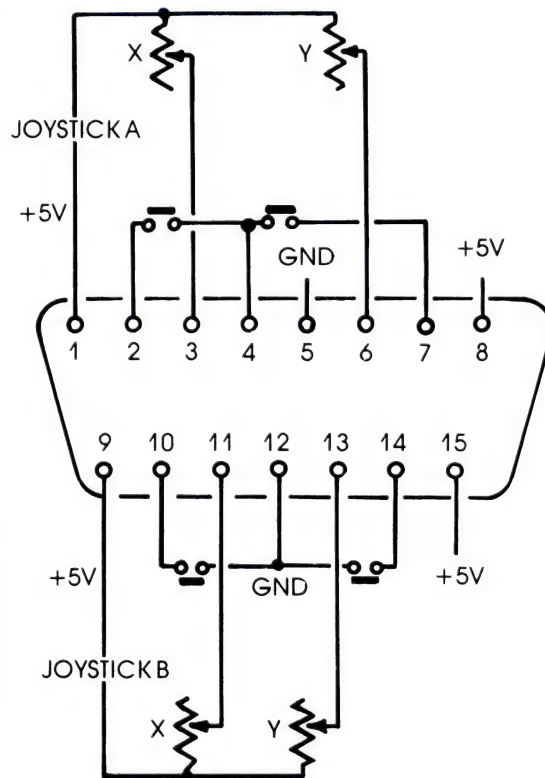
PIN#	VGA	EGA	CGA	MDA
1	RED	GND.	GND.	GND.
2	GREEN/MONO	RED 2	GND.	GND.
3	BLUE	RED	RED	—
4	—	GREEN	GREEN	—
5	—	BLUE	BLUE	—
6	R-GND.	GREEN 2/INTENSITY	+INTENSITY	+INTENSITY
7	G-GND.	BLUE 2/MONO VIDEO	—	+VIDEO
8	B-GND.	HORIZONTAL DRIVE	+HOR. DRV.	+HOR. DRV.
9	—	VERT. DRV.	—VERT. DRV.	—VERT. DRV.
10	GND.	PC GAMES ADAPTOR		
11	GND (COLOUR)			
12	—			
13	HOR. SYNC.			
14	VERT. SYNC.			
15	—			

## Keyboard Connectors

PS/2 (KBD/MOUSE)	
PIN#	FUNCTION
1	+DATA
2	—
3	GND.
4	+5V
5	+CLOCK
6	—

PC/XT/AT	
1	+KBD CLOCK
2	+KBD DATA
3	—KBD RESET
4	GND.
5	+5V

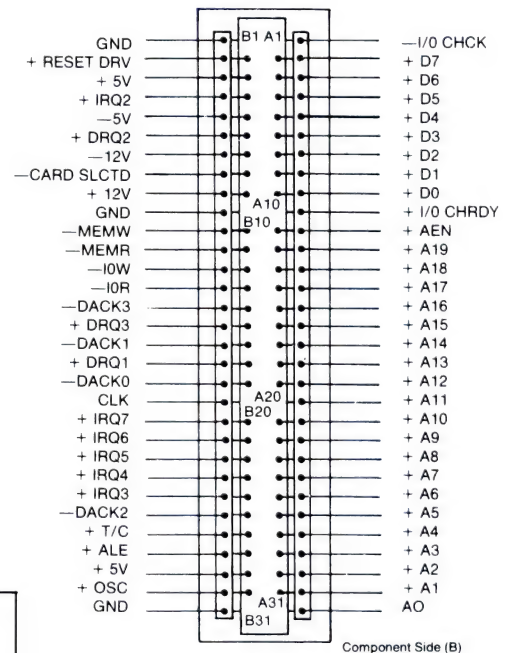
## PC GAMES ADAPTOR



FUNCTION AT PRINTER	PRINTER PIN#	PC PIN#
—STROBE IN	1	1
+DATA 1 IN	2	2
+DATA 2 IN	3	3
+DATA 3 IN	4	4
+DATA 4 IN	5	5
+DATA 5 IN	6	6
+DATA 6 IN	7	7
+DATA 7 IN	8	8
+DATA 8 IN	9	9
—SELECT IN	36	17
+AUTO LF IN	14	14
—INIT IN	31	16
—ACK, OUT	10	10
+BUSY OUT	11	11
+PAPER END OUT	12	12
+SELECT OUT	13	13
—FAULT OUT	32	15
GND.	19-30	18-25

## PC BUS Connector

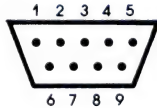
## Rear Panel



## Atari St Connections

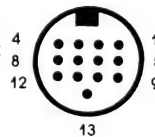
## Mouse/Joystick

- 1 — Up/XB
- 2 — Down/XA
- 3 — Left/YA
- 4 — Right/YB
- 5 — Not Connected
- 6 — Fire/Left Button
- 7 — +5Vdc
- 8 — Ground
- 9 — Joy1 Fire/Right Button



## Monitor

- 1 — Audio Out
- 2 — Composite Video  
(where applicable)
- 3 — General Purpose Output
- 4 — Monochrome Detect
- 5 — Audio In
- 6 — Green
- 7 — Red
- 8 — Plus 12-Volt Pullup
- 9 — Horizontal Sync
- 10 — Blue
- 11 — Monochrome
- 12 — Vertical Sync
- 13 — Ground

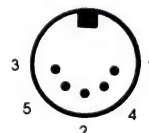


## Midi In

- 1 — Not Connected  
2 — Not Connected  
3 — Not Connected  
4 — IN Receive Data  
5 — IN Loop Return

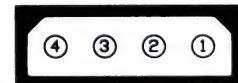
## Midi Out

- 1 — THRU Transmit Data  
2 — Shield Ground  
3 — THRU Loop Return  
4 — OUT Transmit Data  
5 — OUT Loop Return



## PC Floppy Drive

## Power Connections



Front view of connector on Disk Drive

### Pin Power

- 1 +12 Volts  
2 12 Volts return  
3 5 Volts return  
4 + 5 Volts



## Hexadecimal Constants

HEX CODE Most Significant Bytes Least Significant Bytes

	IV	III	II	I
0	0	0	0	0
1	4096	256	16	1
2	8192	512	32	2
3	12288	768	48	3
4	16384	1024	64	4
5	20480	1280	80	5
6	24576	1536	96	6
7	28672	1792	112	7
8	32768	2048	128	8
9	36864	2304	144	9
A	40960	2560	160	10
B	45056	2816	176	11
C	49152	3072	192	12
D	53348	3328	208	13
E	57344	3584	224	14
F	61440	3840	240	15

### Hex-To-Decimal Conversion

DECIMAL VALUE = IV + III + II + I

## The RS-232C Interface

### THE BASIC RS-232C ELECTRICAL SPECIFICATIONS:

Communication rate: 0-20,000 bits per second  
 Driver output voltage levels, maximum no load: -25V logic 1, +25V logic 0  
 Driver output voltage ranges for loads between 3k and 7k ohms: logic 1: -15V (7k) & -5V (3k) logic 0: +15V (7k) and +5V (3k)  
 Driver output current, short circuit: 500mA maximum  
 Driver output impedance with power off: 300 ohms minimum  
 Maximum driver output slew rate: 30 volts per microsecond  
 Receiver input resistance: 7k ohms maximum, 3k ohms minimum  
 Effective receiver input capacitance: 2500pF maximum  
 Maximum receiver input voltage range: -25V to +25V

The following table shows the nine most common signals used for serial communications and their PIN allocations for nine and 25 PIN connectors.

SIGNAL NAME	PIN No (9 pin)	PIN No (25 pin)
TD Transmitted Data	3	2
RD Received Data	2	3
RTS Request to Send	7	4
CTS Clear to Send	8	5
DSR Data Set Ready	6	6
SG Signal Ground	5	7
CD Carrier Detect	1	8
DTR Data Terminal Ready	4	20
RI Ring Indicator	9	22

## Dynamic RAM Cross Reference Chart

Common No.	4116	4164	4464	4C464	41256	41C256	41257	41258
Size	16K x 1	64K x 1	64K x 4	64K x 4	256K x 1	256K x 1	256K x 1	256K x 1
Mode	PAGE	PAGE	PAGE	PAGE	PAGE	PAGE	NIBBLE	S.COLUMN
Process	NMOS	NMOS	NMOS	CMOS	NMOS	CMOS	NMOS	CMOS
FUJITSU	MB8116	MB8264	MB81464	—	MB81256	MB81C256	MB81257	MB81C258
GOLDSTAR	—	—	—	GM71C464	GM71256	GM71C256	—	—
HITACHI	HM4716	HM4864	HM50464	—	HM50256	HM51256	HM50257	HM51258
MITSUBISHI	M5K4116	M5K4164AN	M5M4464	—	M5M4256	—	M5M4257	—
MOTOROLA	MCM4116	MCM6665	MCM41464	—	MCM6256	—	MCM6257	—
NEC	uPD416	uPD4164	uPD41464	—	uPD41256	—	uPD41257	—
OKI	—	MSM3764	MSM41464	—	MSM41256	MSM51C256	MSM41257	—
SAMSUNG	—	KM4164	KM41464	KM41C464	KM41256	KM41C256	KM41257	KM41C258
TI	TMS4116	TMS4164	TMS4464	—	TMS4256	—	TMS4257	—
TOSHIBA	TMM416P	TMM4164	TMM41464	—	TMM41256	—	TMM41257	—

Common No.	44256	44258	511000	511001	511002	514400	514100
Size	256K x 4	256K x 4	1M x 1	1M x 1	1M x 1	1M x 4	4M x 1
Mode	PAGE	S.COLUMN	PAGE	NIBBLE	S.COLUMN	PAGE	PAGE
Process	CMOS	CMOS	CMOS	CMOS	CMOS	CMOS	CMOS
FUJITSU	MB81C4256	MB81C4258	MB81C1000	MB81C1001	MB81C1002	MB814400	MB814100
GOLDSTAR	GM71C4256	—	GM71C1000	—	—	—	—
HITACHI	HM514256	HM514258	HM511000A	HM511001	HM511002	HM514400	HM514100
MITSUBISHI	M5M44C256	—	M5M4C1000	M5M4C1001	—	—	—
MOTOROLA	MCM51426	—	—	—	—	—	—
NEC	uPD424256	uPD424258	uPD421000	uPD421001	uPD421002	uPD424400	uPD424100
OKI	MSM514256	MSM514258	MSM511000	MSM511001	MSM511002	MSM514400	MSM514100
SAMSUNG	KM44C256	KM44C258	KM41C1000	KM41C1001	KM41C1002	KM44C1000	KM41C4000
TI	TMS44C256	—	TMS4C1024	TMS4C1025	TMS4C1027	—	—
TOSHIBA	TC514256	TC514258	TC511000	TC511001	TC511002	TC514400	TC514100

**Notes** 1 Devices made by different manufacturers may not be identical in all respects. e.g. most 4164 RAMS require 128 cycle refresh however the TMS4164 needs 256 cycle refresh and as a result will not work in most Z80 systems.

## ASCII Character Codes as defined in ANSI X3.4

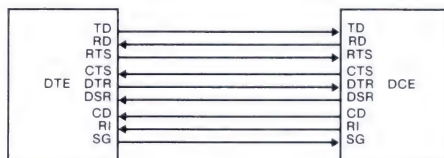
DEC	HEX	CHAR	DEC	HEX	CHAR	DEC	HEX	CHAR	DEC	HEX	CHAR
0	0	NUL	33	21	!	66	42	B	99	63	c
1	1	SOH	34	22	"	67	43	C	100	64	d
2	2	STX	35	23	#	68	44	D	101	65	e
3	3	ETX	36	24	\$	69	45	E	102	66	f
4	4	EOT	37	25	%	70	46	F	103	67	g
5	5	ENQ	38	26	&	71	47	G	104	68	h
6	6	ACK	39	27	'	72	48	H	105	69	i
7	7	BEL	40	28	(	73	49	I	106	6A	j
8	8	BS	41	29	)	74	4A	J	107	6B	k
9	9	HT	42	2A	*	75	4B	K	108	6C	l
10	A	LF	43	2B	+	76	4C	L	109	6D	m
11	B	VT	44	2C	,	77	4D	M	110	6E	n
12	C	FF	45	2D	-	78	4E	N	111	6F	o
13	D	CR	46	2E	.	79	4F	O	112	70	p
14	E	SO	47	2F	/	80	50	P	113	71	q
15	F	SI	48	30	0	81	51	Q	114	72	r
16	10	DLE	49	31	1	82	52	R	115	73	s
17	11	DC1	50	32	2	83	53	S	116	74	t
18	12	DC2	51	33	3	84	54	T	117	75	u
19	13	DC3	52	34	4	85	55	U	118	76	v
20	14	DC4	53	35	5	86	56	V	119	77	w
21	15	NAK	54	36	6	87	57	W	120	78	x
22	16	SYN	55	37	7	88	58	X	121	79	y
23	17	ETB	56	38	8	89	59	Y	122	7A	z
24	18	CAN	57	39	9	90	5A	Z	123	7B	{
25	19	EM	58	3A	:	91	5B	[	124	7C	
26	1A	SUB	59	3B	;	92	5C	\	125	7D	}
27	1B	ESC	60	3C	<	93	5D	]	126	7E	~
28	1C	FS	61	3D	=	94	5E	^	127	7F	DEL
29	1D	GS	62	3E	>	95	5F	_			
30	1E	RS	63	3F	?	96	60				
31	1F	US	64	40	@	97	61	a			
32	20	SPACE	65	41	A	98	62	b			

## ASCII Control Codes

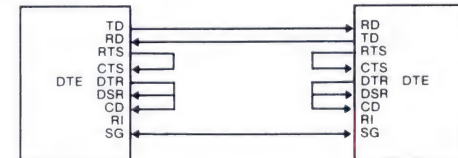
NUL (Ctrl @)	Null	DLE (Ctrl P)	Data Link Escape
SOH (Ctrl A)	Start of Heading	DC1 (Ctrl Q)	Device Control 1
STX (Ctrl B)	Start of Text	DC2 (Ctrl R)	Device Control 2
ETX (Ctrl C)	End of Text	DC3 (Ctrl S)	Device Control 3
EOT (Ctrl D)	End of Transmission	DC4 (Ctrl T)	Device Control 4
ENQ (Ctrl E)	Enquiry	NAK (Ctrl U)	Negative Acknowledge
ACK (Ctrl F)	Acknowledge	SYN (Ctrl V)	Synchronous Idle
BEL (Ctrl G)	Bell	ETB (Ctrl W)	End of Transmission Block
BS (Ctrl H)	Backspace	CAN (Ctrl X)	Cancel
HT (Ctrl I)	Horizontal Tab.	EM (Ctrl Y)	End of Medium
LF (Ctrl J)	Line Feed	SUB (Ctrl Z)	Substitute
VT (Ctrl K)	Vertical Tab.	ESC (Ctrl [)	Escape
FF (Ctrl L)	Form Feed	FS (Ctrl \)	File Separator
CR (Ctrl M)	Carriage Return	GS (Ctrl ])	Group Separator
SO (Ctrl N)	Shift Out.	RS (Ctrl ^)	Record Separator
SI (Ctrl O)	Shift In.	US (Ctrl _)	Unit Separator

## Common RS232-C Connections

Each signal (except ground) is either an input or an output depending whether it is on the Data Terminal Equipment 'DTE' (e.g. a computer terminal) or the Data Circuit Terminating Equipment 'DCE' (e.g. a modem). A typical connection is shown below.



When two computer terminals (DTEs) are connected together, a 'null modem' hook-up is needed to fool each DTE into thinking that it is connected to DCE. A typical null modem connection is shown below.





# Australian UHF Repeater List

Area	Channel	Area	Channel	Area	Channel	Area	Channel
<b>ACT</b>							
Canberra	2/32	Tweed Heads	4/34	Mundubbera	6/36	Echuca	6/36
Canberra	8/38	Wagga Wagga	1/31	Murgon	7/37	Euroa	3/33
<b>New South Wales</b>							
Albury	6/36	Wagga Wagga	5/35	Nebo	8/38	Falls Creek	3/33
Armidale	4/34	Walbundrie	2/32	Rockhampton	1/31	Foster	6/36
Barraba	6/36	Walcha	2/32	Rockhampton	4/34	Geelong	4/34
Bathurst	8/38	Walcha	6/36	Roma	1/31	Halls Gap	6/36
Bega	6/36	Walcha	8/38	Springsure	3/33	Hamilton	5/35
Belbora	1/31	Warden	1/31	Sunshine Coast	6/36	Harcourt	8/38
Binya	3/33	Warrumbungles	1/31	Sunshine Coast	8/38	Hawkesdale	4/34
Blue Mountains	2/32	Wingham	1/31	Tambo	6/36	Horsham	3/33
Bombala	8/38	Wilcannia	1/31	Taroom	2/32	Kerang	2/32
Booral	7/37	Wollongong	8/38	Thargomindah	6/36	Lavington	4/34
Bowral	6/36	<b>Northern Territory</b>		Toowoomba	2/32	Mansfield	2/32
Braidwood	3/33	Bushy Park	1/31	Toowoomba	4/34	Melbourne (North)	1/31
Brewarrina	1/31	Darwin	1/31	Townsville	1/31	Melbourne (Metro)	3/33
Brindabella Ranges	7/37	Eridunda Station	3/33	Townsville	4/34	Melbourne (Metro)	5/35
Broken Hill	4/34	Katherine	2/32	Wavell Heights	2/32	Melbourne (South)	7/37
Broken Hill	7/37	Maryvale Station	4/34	Warwick	1/31	Mildura	3/33
Buladelah	7/37	Mt Swan	2/32	Wide Bay	1/31	Moe	2/32
Casino	6/36	<b>Queensland</b>		Yaraka	7/37	Mornington Pen.	8/38
Cobar	8/38	Alpha	2/32	<b>South Australia</b>		Mortlake	7/37
Coffs Harbour	6/36	Atherton	8/38	Adelaide	5/35	Mt Cann	8/38
Coolah	6/36	Amiens	8/38	Angaston	4/34	Mt Concord	6/36
Cooma	4/34	Ayr	3/33	Blinman	3/33	Mt Delegate	3/33
Coonabarabran	4/34	Barcaldine Downs	1/31	Carrieton	1/31	Mt Terrible	8/38
Corowa	2/32	Bathurst Heads	1/31	Ceduna	1/31	Myrtleford	8/38
Corowa	5/35	Bauhina Downs	4/34	Clare	7/37	Penshurst	1/31
Cowra	7/37	Biloela	7/37	Cleve	2/32	Shepparton	7/37
Deepwater	5/35	Blackall	8/38	Coonalpyn	6/36	St Arnaud	1/31
Deniliquin	1/31	Blackwater	6/36	Coppudurba Hill	1/31	Swifts Creek	1/31
Dungog	3/33	Brisbane	1/31	Crystal Brook	1/33	Tallangatta	7/37
Eden	2/32	Brisbane	5/35	Hawker	7/37	Wangarrata	6/36
Glen Innes	7/37	Brisbane	7/37	Kangaroo Island	4/34	Wau bra	7/37
Grafton	8/38	Bundaberg	4/34	Mannum	8/38	<b>West Australia</b>	
Grenfell	1/31	Bundaberg	7/37	Mt Bryan	8/38	Albany	3/33
Gundagai	7/37	Cairns	3/33	Mt Gambier	5/35	Augusta	7/37
Gunnedah	2/32	Chinchilla	7/37	Mt Gambier	7/37	Bencubin	2/32
Guyra	1/31	Clermont	3/33	Myponga	2/32	Boyup Brook	4/34
Hampton	1/31	Clermont	8/38	Naracoorte	4/34	Bunbury	2/32
Hay	4/34	Crows Nest	6/36	Orroroo	2/32	Carnamah	2/32
Inverell	2/32	Dimbulah	8/38	Port Lincoln	8/38	Carnarvon	2/32
Jindabyne	1/31	Dirranbandi	6/36	Port Pirie	4/34	Coolgardie	7/37
Junee	5/35	Double Island Point	6/36	Renmark	6/36	Darwin	6/36
Kariong	8/38	Edward River	6/36	Snowtown	6/36	Denmark	1/31
Lismore	2/32	Emerald	8/38	Tarcoola	6/36	Esperance	4/34
Manilla	3/33	Gladstone	8/38	Wilkatana	8/38	Kalgoorlie	2/32
Monkey Hill	6/36	Gold Coast	6/36	Yorke town	7/37	Kambalda	1/31
Mt Lambie	2/32	Goondiwindi	3/33	<b>Tasmania</b>		Katanning	1/31
Murrirundi	3/33	Gympie	4/34	Burnie	8/38	Kellerberrin	1/31
Muswellbrook	4/34	Gympie	2/32	Central Highlands	7/37	Kulin	4/34
Narrabri	2/32	Gympie	5/35	Devonport	1/31	Lancelin	4/34
Narranderra	8/38	Gympie	7/37	East Coast	6/36	Mandurah	7/37
Narromine	5/35	Hervey Bay	8/38	Flinders Island	1/31	Manjimup	6/36
Narromine	6/36	Hughenden	1/31	Hobart	1/31	Margaret River	6/36
Newcastle	1/31	Ingham	2/32	Hobart	5/35	Meekatharra	1/31
Newcastle	2/32	Inglewood	1/31	Launceston	2/32	Merridin	2/32
Newcastle	5/35	Innisfail	1/31	Launceston	6/36	Mia Mia	1/31
Newcastle	6/36	Ipswich	4/34	Midlands	4/34	Mt Manypeaks	6/36
Nundie	7/37	Jericho	4/34	North East Coast	3/33	Mt Barker	5/35
Orange	3/33	Kilcoy	3/33	North West Coast	4/34	Mt Barrow	7/37
Port Macquarie	2/32	Lakeland Downs	2/32	North West Coast	6/36	Mt Saddleback	1/31
Sydney	5/35	Longreach	3/33	Sandfly	2/32	Mt Solus	4/34
Sydney (South)	1/31	Mackay	3/33	West Coast	2/32	Nannup	2/32
Sydney (West)	3/33	Mackay	6/36	<b>Victoria</b>		Perth	1/31
Sydney (Outer West)	4/34	Marlborough	2/32	Alexandra	1/31	Perth	3/33
Sydney (North)	7/37	Maryborough	6/36	Ballarat	2/32	Perth	5/35
Tamworth	4/34	Maxwelton	2/32	Ballarat	5/35	Perth	8/38
Tenterfield	3/33	Miles	6/36	Bairnsdale	7/37	Ravensthorpe	8/38
Tumbarumba	3/33	Monto	3/33	Beech Forest	3/33	Stirling Ranges	7/37
Tumut	6/36	Moranbah	4/34	Bendigo	4/34	Wickham	1/31
		Moura	1/31	Cavendish	8/38	Wongan Hills	8/38
		Mt Isa	1/31			Wyalkatchem	6/36
						York	7/37



## MF-AM Transmission Standards

**Frequency Range:** 531-1602kHz  
**Channel Frequencies:** 531, 540, 549...1593, 1602  
 (Note: Some special services are located slightly above this band. Receivers may need modification).  
**Stereo Signal:** Compatible quadrature amplitude modulated (C-Quam)  
**Pilot Tone:** 25Hz +/-0.1Hz with a dev. of 3% to 5% of the quadrature ch  
**Frequency Response:** within 2dB (50Hz-7.5kHz)  
**THD:** Not exceeding 4% at 80% modulation (400Hz to 5kHz)  
**Stereo Separation:** 18dB min.

## VHF-FM Radio Transmission Standards

**Frequency Range:** 88-108MHz  
**Channel Frequencies:** 88.1, 88.3...107.7, 107.9  
**Deviation:** 75kHz  
**Pre-emphasis/De-emphasis:** 50 microseconds  
**Stereo Channel Subcarrier Frequency:** 38kHz  
**Pilot Frequency:** 19kHz

## Colour TV Transmission Standards

**Channel Width:** 7MHz vestigial sideband trans.  
**Vision Carrier:** 1.25MHz above lower frequency edge of channel  
**Primary Sound Carrier:** 5.5MHz above vision carrier  
**Secondary Sound Carrier:** 242.1875 kHz above primary sound carrier  
**Vision Modulation:** Negative amplitude modulation  
**Lines per Picture:** 625 lines, interlaced 2:1  
**Line Frequency:** 15625Hz  
**Field Frequency:** 50Hz  
**Colour Subcarrier Frequency:** 4.43361875 MHz  
**Aspect Ratio:** 4:3  
**Horizontal Sync Pulse Amplitude:** 100% carrier amplitude  
**Front Porch:** 1.3 - 1.8us  
**Back Porch:** Line blanking interval - (front porch + sync pulse) 11.8 - 12.3us  
**Line Blanking Interval:** 77% peak carrier level  
**Black & Blanking Level:** 20% peak carrier level  
**White Level:** 2.5H (H=line period, 64us)  
**Pre-equalisation Pulse Interval:** 2.5H  
**Post-equalisation Pulse Interval:** 2.5H  
**Field Sync Pulse Interval:** 2.5H + 12us  
**Field Blanking Interval:** 2.5H + 12us  
**Ratio peak vision to peak sound carrier:** Single sound carrier systems: 10db  
 Dual sound carrier systems, Ch1: 13dB, Ch2: 20dB  
**Sound Modulation:** FM  
**Sound Deviation:** +/-50kHz

## Australian TV Channels

Chnl	Vision Carrier (MHz)	Primary Sound Carrier (MHz)	Chnl	Vision Carrier (MHz)	Primary Sound Carrier (MHz)
0	46.25	51.75	44	639.25	644.75
1	57.25	62.75	45	646.25	651.75
2	64.25	69.75	46	653.25	658.75
3	86.25	91.75	47	660.25	665.75
4	95.25	100.75	48	667.25	672.75
5	102.25	107.75	49	674.25	679.75
5A	138.25	143.75	50	681.25	686.75
6	175.25	180.75	51	688.25	693.75
7	182.25	187.75	52	695.25	700.75
8	189.25	194.75	53	702.25	707.75
9	196.25	201.75	54	709.25	714.75
10	209.25	214.75	55	716.25	721.75
11	216.25	221.75	56	723.25	728.75
28	527.25	532.75	57	730.25	735.75
29	534.25	539.75	58	737.25	742.75
30	541.25	546.75	59	744.25	749.75
31	548.25	553.75	60	751.25	756.75
32	555.25	560.75	61	758.25	763.75
33	562.25	567.75	62	765.25	770.75
34	569.25	574.75	63	772.25	777.75
35	576.25	581.75	64	779.25	784.75
39	604.25	609.75	65	786.25	791.75
40	611.25	616.75	66	793.25	798.75
41	618.25	623.75	67	800.25	805.75
42	625.25	630.75	68	807.25	812.75
43	632.25	637.75	69	814.25	819.75

## New Zealand TV Channels

Chnl	Frequency Bandwidth	Video Freq. MHz	Sound Freq. MHz
1	44-51	45.25	50.75
2	54-61	55.25	60.75
3	61-68	62.25	67.75
4	174-181	175.25	180.75
5	181-188	182.25	187.75
6	188-195	189.25	194.75
7	195-202	196.25	201.75
8	202-209	203.25	208.75
9	209-216	210.25	215.75
10	216-223	217.25	222.75
11	223-230	224.25	229.75

## Australian 27MHz Marine Frequencies

Freq. (MHz)	Use
27.680	Commercial organisations. Calling and working ship-ship and ship-shore.
27.720	Professional fishing. Calling and working ship-ship and ship-shore.
27.820	Professional fishing. Calling and working ship-ship and ship-shore.
27.860	Distress, safety and calling, supplementary to 27.880.
27.880	Distress, safety and calling
27.900	Non Commercial organisations. Calling and working ship-shore.
27.910	Non Commercial organisations. Calling and working ship-shore.
27.940	Non-Commercial organisations. Calling and working for club events, ship-shore and ship-ship.
27.960	Non-Commercial organisations. Calling and working, ship-ship.
27.980	Recognised rescue organisations, eg. Surf rescue. Calling and working. Ship-ship and ship-shore.

## VHF Marine Frequencies

Ch	Freq. Ship	(MHz) Shore	Ch	Freq. Ship	(MHz) Shore
1	156.050	160.650	60	156.025	160.625
2	156.100	160.700	61	156.075	160.675
3	156.150	160.750	62	156.125	160.725
4	156.200	160.800	63	156.175	160.775
5	156.250	160.850	64	156.225	160.825
6	156.300	160.900	65	156.275	160.875
7	156.350	160.950	66	156.325	160.925
8	156.400	161.000	67	156.375	160.975
9	156.450	161.050	68	156.425	161.025
10	156.500	161.100	69	156.475	161.075
11	156.550	161.150	70	156.525	161.125
12	156.600	161.200	71	156.575	161.175
13	156.650	161.250	72	156.625	161.225
14	156.700	161.300	73	156.675	161.275
15	156.750	161.350	74	156.725	161.325
16	156.800	161.400	75	156.775	161.375
17	156.850	161.450	76	156.825	161.425
18	156.900	161.500	77	156.875	161.475
19	156.950	161.550	78	156.925	161.525
20	157.000	161.600	79	156.975	161.575
21	157.050	161.650	80	157.025	161.625
22	157.100	161.700	81	157.075	161.675
23	157.150	161.750	82	157.125	161.725
24	157.200	161.800	83	157.175	161.775
25	157.250	161.850	84	157.225	161.825
26	157.300	161.900	85	157.275	161.875
27	157.350	161.950	86	157.325	161.925
28	157.400	162.000	87	157.375	161.975
			87A	157.375	161.975
			88	157.425	162.025

## VHF Marine Frequencies Use

Chl	Use
6	SAR, Port Operations, Commercial
8	Port Operations, Commercial
9-14	Port Operations
16	Distress and Safety
20	Port Operations
23-28	Public Correspondence (Seaphone)
29	Distress and Safety
68	Port Operations
71	Professional Fishing
72	Yachts, Commercial, Professional Fishing, Port Operations
73	Non-Commercial, Yachts etc.
74	Commercial
77	Yachts, Professional Fishing
78	Commercial
79	Port Operations
87	Public Correspondence (Seaphone)
87A	Withdrawn 31-3-92

## Australian CB Radio Channels

Chnl No.	HF Freq. (MHz)	UHF Freq. (MHz)
1	26.965	476.425
2	26.975	476.450
3	26.985	476.475
4	27.005	476.500
5	27.015	476.525
6	27.025	476.550
7	26.035	476.575
8	27.055	476.600
9	27.065	476.625
10	27.075	476.650
11	27.085	476.675
12	27.105	476.700
13	27.115	476.725
14	27.125	476.750
15	27.135	476.775
16	27.155	476.800
17	27.165	476.825
18	27.175	476.850
19	27.185	476.875
20	27.205	476.900
21	27.215	476.925
22	27.225	476.950
23	27.255	476.975
24	27.235	477.000
25	27.245	477.025
26	27.265	477.050
27	27.275	477.075
28	27.285	477.100
29	27.295	477.125
30	27.305	477.150
31	27.315	477.175
32	27.325	477.200
33	27.335	477.225
34	27.345	477.250
35	27.355	477.275
36	27.365	477.300
37	27.375	477.325
38	27.385	477.350
39	27.395	477.375
40	27.405	477.400

Emergency Channels, HF: Ch9, UHF: Ch5



## New Zealand CB Channels (as of 1/7/88)

Chnl	Freq. (MHz)	Use
1	26.330	AM only
2	26.340	AM only
3	26.350	AM only
4	26.370	AM only
5	26.380	AM only
6	26.390	AM only
7	26.400	AM only
8	26.420	AM only
9	26.430	AM only
10	26.440	AM only
11	26.450	AM only
12	26.470	AM only
13	26.480	AM only
14	26.490	AM only
15	26.500	Call/Emerg.
16	26.520	AM only
17	26.530	AM only
18	26.540	AM only
19	26.550	AM only
20	26.570	AM only
21	26.580	AM only
22	26.590	AM only
23	26.620	AM only
24	26.600	AM only
25	26.610	SSB only
26	26.630	SSB only
27	26.640	SSB only
28	26.650	SSB only
29	26.660	SSB only
30	26.670	SSB only
31	26.680	SSB only
32	26.690	SSB only
33	26.700	SSB only
34	26.710	SSB only
35	26.720	SSB only
36	26.730	SSB only
37	26.740	SSB only
38	26.750	SSB only
39	26.760	SSB only
40	26.770	SSB only



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## STOCK AND PRICES

This catalogue is produced to cover the period from 1st May to 1st September 1993. At the date of print, we believe that the displayed products will be available for that period at the catalogued prices. You will appreciate, however, that factors influencing prices and supply are often outside of our control. We are aware of the inconvenience that this sometimes causes and would like to take this opportunity to ask you to bear with our problems; if you are not sure as to prices and stock availability, please phone and check with us before making the journey.

**Thank you —**

**The Staff of Dick Smith Electronics**

## GUARANTEES

### Manufacturer's guarantee.

**1. All Australian manufacturer's guarantees are fully valid on products we sell**

### 2. Semiconductor guarantee policy.

Most manufacturers will not replace semi-conductors, as all semiconductors shipped from their factories are computer quality controlled. However, in some cases when the value of the semiconductor is considerable (eg over \$5), a manufacturer's engineer will test the semiconductor if it is returned unsoldered to them. You can return your semiconductor to the manufacturer's agents either through our company, if purchased from us, or deal direct, to save time.

**3. Periods of guarantee.** Unless stated otherwise, and subject to any statutory rights, items in this catalogue now carry a standard warranty of 90 days from date of purchase. Many items now carry warranties from 12 months to 2 years, and some up to 5 years. Please ask our store staff for details.

**4. Service under warranty.** If you are not supplied with a guarantee card, keep your sales dockets, including cash register receipt, in a safe place, as the sales docket will become your guarantee card. If your purchase requires warranty service within the warranty period, you will be requested to produce your docket when returning the product under warranty for repair.

**5. Freight.** Although repairs under warranty are carried out free of charge, the customer is required to pay the freight both ways. Therefore, to save yourself money, make absolutely certain that the unit is faulty before returning for repair.

## SALES TAX

All prices shown in this catalogue include sales tax, where applicable. Goods can only be supplied less tax, if:

1. A sales tax number or exemption certification is supplied on a written official order prior to goods being released.
2. The goods are to be directly exported by us
3. For sales tax exemption, the minimum value of each item must be \$10.00 with a minimum total order value of \$50. For Mail Orders, the minimum total order value is \$10.
4. Our Wholesale Company will be glad to advise you on large quantity purchases or purchases for re-sale. For enquiries please ring on the number below and ask for our Wholesale division

**Outside Sydney**  
**(Free call) (008) 26 3922**  
**Sydney (02) 888 3200**

## SUBSTITUTION

When a certain product is no longer available, where possible we will substitute an equal or better quality product. If our purchasing power makes this substitute cheaper, then we will pass the savings on to the consumer. If, however, we can improve on the product, the price could either increase or remain the same as the original product. To summarise, all prices and specifications are subject to change without notice.

## PRICES ON PRODUCTS

All prices in this catalogue were checked at time of compilation, but are subject to change without notice.

All 10 Up prices shown are for ten units of the same item and not for 10 mixed items. (Eg. 10 transistors must be of the same type and value.)

## TERMS

We can offer credit terms through AGC to customers who personally visit our stores or phone our Mail Order or Commercial Divisions. Leasing facilities are available to commercial and business customers on application. These terms are offered on condition that the customer is approved by the finance company (\*TAP: To Approved Purchasers).

## RAIN CHECK POLICY

If advertised goods are sold out during the currency of the advertisement or if goods are otherwise unavailable for unforeseen reasons, our policy is to issue a 'Rain Check' to enable you to buy the goods at a later date for the advertised price. This does not apply to special scoop purchases, limited stock, discontinued or clearance lines.

## SPECIAL PURCHASES

We normally stock the goods shown in this catalogue and in our regular advertisements in the daily press and in electronics magazines. New items are continually being sourced and added to our range to cater for as wide a range of needs as possible. A great deal of effort is put into searching for new products. For this reason, it is impossible for us to purchase special items for individual customers outside our normal range. However, each store maintains a 'products asked for' book and if demand is sufficient for any particular item, we will investigate the viability of stocking it in all stores.

## QUOTATIONS

We do give written quotations if required. We must emphasise however, that prices are subject to confirmation at time of order. This is because there are many factors in our prices that are beyond our control and therefore beyond our responsibility.

## STORE HOURS

Dick Smith Electronics stores open during normal trading hours including Saturdays. Some stores open on Sundays and public holidays. Please ring the store concerned for their particular hours. (Numbers on pages 4-5)

## LIABILITY

As the use of our products is completely beyond our control or supervision, we cannot be held responsible for damage or destruction, consequential or otherwise, of equipment or articles in or on which our products are used, attached, or otherwise employed. Liability is limited to repair, replacement or refund (at our option) of goods purchased.

## HAVE YOU ANY PROBLEMS OR COMPLAINTS?

We are particularly proud of the reputation our company has earned with electronics enthusiasts. The last thing we want is an unhappy customer. If there is something that you don't like, or if you have any suggestions which may help us serve you better, please let us know. Every call or letter will receive personal attention. Because problems can be solved most quickly at local level, we suggest that our State Managers will be able to help you best. Contact them on the following direct numbers:

**NSW:** (02) 642 8622  
**Vic/Tas:** (03) 428 0141  
**Qld/NT:** (07) 391 6490  
**WA:** (09) 227 8243  
**SA:** (08) 232 5119

## SATISFACTION GUARANTEE !

If for any reason you are not satisfied with your purchase, return the goods to us within 7 days of purchase, in original condition and in original carton, and we will exchange or return your money, less transportation costs.

Goods returned to us must be unmarked and in the exact condition as supplied. You must include all sales dockets when you return the goods. This policy does not cover semiconductors, books, computer software. For all mail order customers, our guarantee period is specially extended to 14 days.

## COPYRIGHT

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## PHONE 24 HOURS

**Outside Sydney**  
**(008) 22 6610**  
**(Order Line Only) (Free call)**  
**Sydney (02) 888 2105**  
**Fax (02) 805 1986**

### Mail Orders:

**Dick Smith Electronics**  
**PO Box 321, NORTH RYDE,**  
**NSW 2113**

## ORDERING

Electronic ordering via the phone, fax, etc. is the fastest and easiest. We have also included a Mail Order form in this catalogue. New mail order forms are despatched with each order.

## FREE CALL ORDERING

For your convenience we have installed a Free Call (008) telephone number. (This is an order line only, please use (02) 888 2105 for all other enquiries). There is no call charge when using this number and it can be used 24 hours a day, seven days a week anywhere in Australia (an answering machine will take your order out of normal business hours.) Sydney area customers should ring our Sydney number.

## CATALOGUE NUMBERS

To minimise the chance of error in your order please use the catalogue number as well as a description of the product.

## PAYMENTS

Money orders or crossed cheques to be sent with order. DO NOT SEND CASH through the post. Please make money orders payable at North Ryde Post Office, and cheques made payable to Dick Smith Electronics.

## CREDIT CARDS

For your convenience, we accept orders for mail orders on Credit Cards. The minimum order value on Bankcard, Visa, Mastercard, American Express and Diners Club purchase is \$10.00.

## NEW ZEALAND CUSTOMERS

Because of our larger stock range, many New Zealand customers use our Mail Order service. When buying from overseas through Dick Smith Electronics, remember to take currency differences into account.

## PAPUA NEW GUINEA & NEW ZEALAND BANKCARD

We accept overseas Bankcard as payment for International mail orders. Simply fill in the Bankcard details on the Mail Order Form.

## MINIMUM MAIL ORDER VALUE

The minimum order amount is \$10 unless otherwise implied in 'Special Offers' through advertisements.

## OVERSEAS MAIL ORDERS

We are happy to sell to foreign countries. Simply address your order to Dick Smith

Electronics International Mail Orders at the above address or phone ISD 612 888 2105 or fax 612 805 1986. Where possible, we will deduct Australian Sales Tax (NB \$10 minimum for sales tax exemption).

On more expensive items, the savings in sales Tax could mean the cost of freight is recovered. Remember, however, that you may have to pay customs and importing charges at your end (if applicable). We cannot supply full customs documentation, but all parcels include the required customs dockets.

We would also remind overseas customers that our guarantees are 'ex-store'. If, for any reason, goods are returned to us from overseas (eg for service, etc) it is absolutely essential that Customs documents are included. If they are not, it can be a very costly process to obtain Customs Clearance and this charge must be paid by the customer. Failure to include Customs documents can also result in long delays.

## INSURANCE

Our order form allows you to elect to have the goods insured at your cost — otherwise loss of goods in transit is at your risk.

## DAMAGED GOODS

All claims for damaged or missing goods must be filed with the carrier concerned — do not open the parcel if you suspect that the goods are damaged.

## BACK ORDERS

All goods in stock are despatched promptly. Goods out of stock are Back Ordered and sent later at our expense unless we advise otherwise. Back order prices are firm for 60 days from date of order. All back orders are despatched immediately we receive the goods from our suppliers. When we send a copy of your order back to you, the delay times will be quoted, but because this information is given to us by our suppliers we cannot guarantee their accuracy. We will advise you of any further delays monthly. Minimum back order value \$10.

## PHONE ENQUIRIES ON ORDERS

You are welcome to enquire about your order by phoning our enquiry line (02) 888 2105. Because our system is computerised, we can normally give you the information you want very quickly — at most within a couple of minutes.

**Before phoning, please have available your customer number (from your last invoice or from any correspondence), name and address on order, and the information required.**



## WHOLESALE DIVISION

Our Wholesale Division can offer extremely competitive prices on large quantities and bulk buys. If you've got a project in mind we'll gladly quote you on large quantity purchases or you can write to the manager of our Wholesale Division at the address below:

## HEAD OFFICE

**Sydney (02) 888 3200**  
**Outside Sydney (Free call)**  
**(008) 26 3922**  
**Fax (02) 805 1986**

**PO Box 321**  
**NORTH RYDE NSW 2113**

## MELBOURNE OFFICE

**Phone (03) 428 0140**  
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